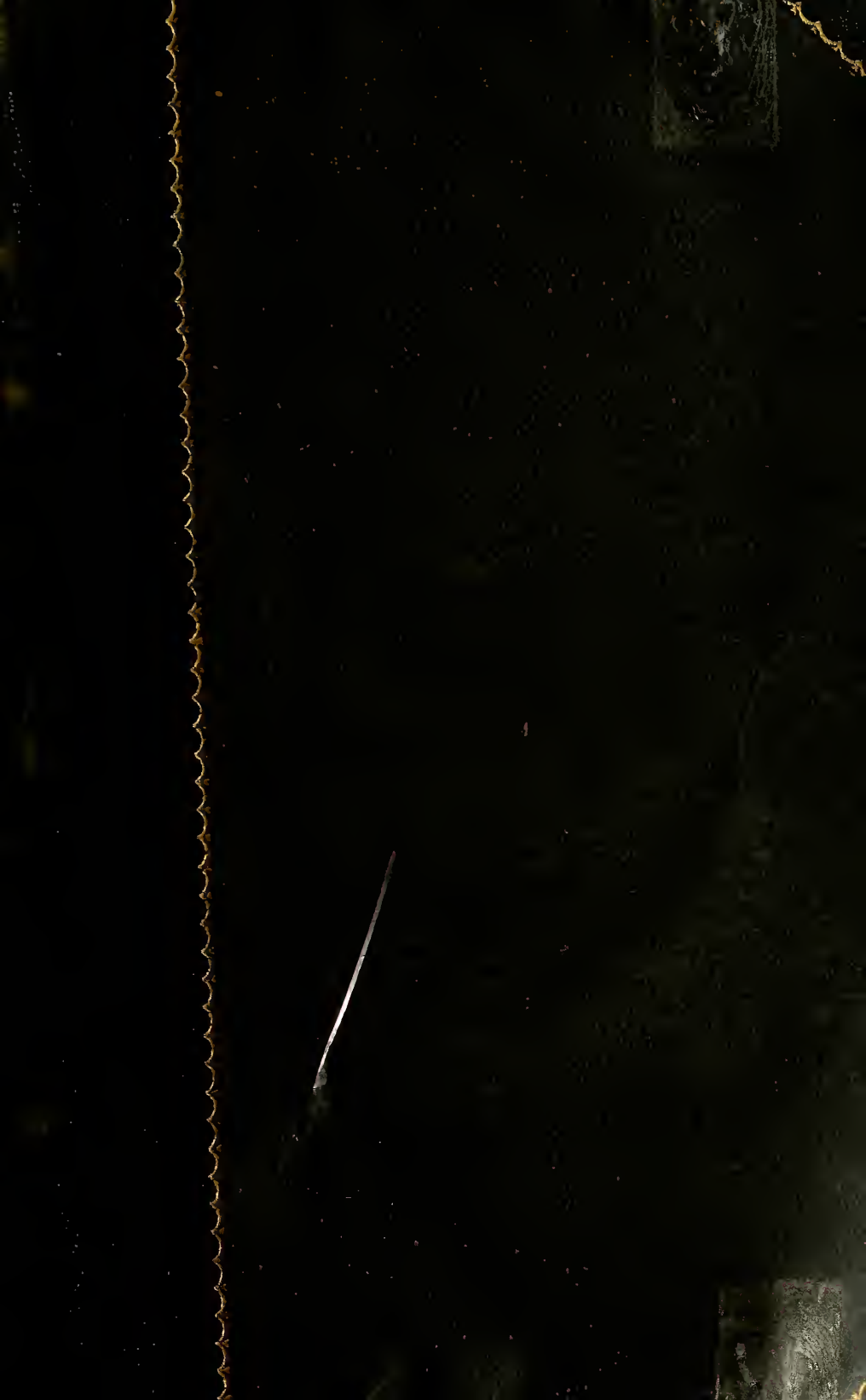


CITY DOCUMENTS

OF THE

CITY OF LOWELL,

MASSACHUSETTS,

FOR THE

YEAR 1890-1891.



LOWELL, MASS.
CITIZEN NEWSPAPER COMPANY, PRINTERS.
1891.

Extract From the Ordinances of Lowell.

Chapter VIII.—City Documents.

Section 5. All City Documents (except the Rules and Regulations for the Government of the Police and Fire Department) shall be printed in pamphlet form of the size of the Annual Report of the School Committee.

Section 6. All City Documents shall be bound together in one volume, under the direction of the City Clerk, and three or more copies shall be placed in the City Library, and one copy in the library of the Middlesex Mechanics' Association, one copy shall be sent to each city of the Commonwealth, to the library of the Harvard College, the Public Library of Boston, the State Library, the Smithsonian Institute at Washington, and the Old Residents' Historical Association of Lowell.

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2. Municipal Register, containing Rules and Orders of the City Council, and a List of the Government and Officers of the City of Lowell, for 1891.
3. Sixty-fifth Annual Report of the School Committee of Lowell, together with the Twenty-seventh Annual Report of the Superintendent of Schools, 1890.
4. Auditor's Fifty-fifth Annual Report of the Receipts and Expenditures of the City of Lowell, together with the Treasurer's Account, and the Account of the Commissioners of Sinking Fund, for the financial year ending Dec. 31, 1890.
5. Eighteenth Annual Report of the Lowell Water Board, and Reports of the Superintendent of Water Works and the City Engineer, to the Water Board, for 1890.
6. Report of the Overseers of the Poor, with accompanying papers, 1890.
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8. Report of the Births, Marriages, and Deaths, 1890.
9. Report of the Superintendent of Burials, 1890.
10. Report of the Board of Health, 1890.
11. Report of the Superintendent of Streets, 1890.
12. Report of the Chief Engineer of the Fire Department, 1890.
13. Report of the Superintendent of Street Lights, 1890.

14. Report of the Police Department, 1890.
15. Report of the Trustees of the City Library, 1890.
16. Report of the City Solicitor, 1890.
17. Report of the Superintendent of the City Scales, 1890.
18. Report of the Sealer of Weights and Measures, 1890.
19. Salaries of the Officers of the City of Lowell for 1890.

THE INAUGURAL ADDRESS

OF

HIS HONOR,

GEORGE W. FIFIELD,

MAYOR OF THE CITY OF LOWELL,

TO THE

TWO BRANCHES OF THE CITY GOVERNMENT,

JANUARY 5, 1891.



LOWELL;
DAILY NEWS JOB PRINT, HILDRETH BUILDING.
1891.

CITY OF LOWELL.

In Common Council, January 6, 1891.

Order requesting His Honor the Mayor to furnish a copy of his Inaugural Address.

Ordered, if the Board of Aldermen concur, That His Honor the Mayor be and he is hereby requested to furnish a copy of his Inaugural Address for publication.

In Common Council, January 6, 1891.

Read and adopted; sent up for concurrence.

DAVID CHASE, *Clerk.*

In Board of Aldermen, January 7, 1891.

Read and adopted in concurrence.

GIRARD P. DADMAN, *City Clerk.*

ADDRESS.

MEMBERS OF THE CITY COUNCIL:

Gentlemen — Elected to administer the affairs of Lowell for the present municipal year, we are assembled here to-day, in accordance with law and custom, to take upon ourselves the oath of office. That oath is a solemn pledge to the people that we will, faithfully and fearlessly, discharge the duties incumbent upon us, to the best of our abilities. In the discharge of these duties we should not recognize the selfish demands of party, class, or section. Nominated, as we each have been, by some political party, we have been elected by — and we thus become to-day the servants of — the whole people and of no party. What the people most desire is not a partisan government, not a government of class or section, but a good and just government, which consists in serving all alike.

Perhaps the most important obligation resting upon us is the proper care of the financial affairs of our city. It should be our constant aim to insure to the people for every dollar collected from them in taxation, a full and equitable return in benefits. No unnecessary expenditures should be made during the current year.

I interpret the verdict of the people in the recent election as one directing us to practice such a rigid

economy that the taxpayers may be relieved from their unusually heavy and unwelcome burdens. All proposed expenditures for luxuries, to be paid for from our annual tax levy, whether it be for a "boulevard," pleasure resorts or anything of a kindred nature, should at least be deferred until we have recovered from our present financial strain.

The imperative demand of our citizens for improvements which are necessities, will doubtless consume during the current year, after providing for interest, sinking funds, maturing loans and salaries, every dollar that the taxpayers should be called upon to contribute in taxation. An extended examination of the city documents discloses a strong tendency to extravagance in many small ways; and shows that there are a great number of demands now made upon the treasury that were not made upon it ten or fifteen years since for the same purposes. These small sums amount in the aggregate to a large total, and a careful scrutiny of the smaller outlays will, in my judgment, result in a large annual saving.

FINANCIAL.

The Auditor of Accounts furnishes me with the following financial exhibit for the year 1890:

Cash in the treasury, Jan. 1, 1890	$ 68.168 50
Amount received into the treasury during the year	3,634,949 62
Making a total of	$3,703,118 12
Amount paid from the treasury during year 1890	3,613,584 04
Cash in the treasury, Dec. 31, 1890	$ 89,534 08

CITY DEBT.

Amount of ordinary city debt, Jan. 1, 1890	$1,633,700 00	
Amount borrowed during year 1890	226,000 00	
Total	$1,859,700 00	
Amount paid during the year 1890	176,700 00	
Total ordinary city debt, Dec. 31, 1890,		$1,683,000 00
Amount of the debt of the city on account of Water Works, Jan. 1, 1890	$1,828,000 00	
Amount borrowed during year 1890	600,000 00	
Total	$2,428,000 00	
Amount paid during the year 1890	1,217,000 00	
Total debt of the city on account of water works, Dec. 31, 1890		1,211,000 00
Total debt of the city, Dec. 31, 1890,		$2,894,000 00
Ordinary city debt, Dec. 31, 1890	$1,683,000 00	
Amount of the several sinking funds, for the payment of the same, Dec. 31, 1890	679,357 61	
Net ordinary debt of the city, Dec. 31, 1890		$1,003,542 39
Debt of the city on account of water works, Dec. 31, 1890	$1,211,000 00	
Amount of the several sinking funds for the payment of the same, Dec. 31, 1890	53,873 80	
Net debt of the city on account of water works, Dec. 31, 1890		1,157,126 20
Total net debt of the city, Dec. 31, 1890		$2,160,758 59
Total net debt of the city, Dec. 31, 1889		2,136,117 49
Increase in the net debt of the city during the year 1890		$24,651 10

Of the cash on hand, $86,000 is held for the payment of a like amount of the old water loan bonds matured but not yet presented for payment, the payment of which will reduce the net debt by that amount.

LOANS.

The following loans were made during the year 1890:

Schools	$ 35,000 00
School Houses	22,500 00
Public Buildings	7,750 00
Police	3,750 00
Fire Department	20,000 00
Commons	6,000 00
Health	3,500 00
Roads and Bridges	32,500 00
City Hall and Memorial Buildings	95,000 00
Total	$226,000 00

STREETS.

There have been expended by the Street Department, during the past year, $125,302.59. Of this amount, $70,000 was raised by the tax levy of the year, $32,500 borrowed, and the balance, $22,802.59, came from sidewalk assessments and other sources. The average expenditure for the past five years was $123,719.73 per year. This sum, if properly expended, is in my judgment ample to keep our streets in a good and satisfactory condition. But do we find them so? I think that the almost universal verdict

is that they are not in a satisfactory condition. In fact many of our principal streets are in very bad condition, in some cases unfit for travel. Should there be expended this year a sum equal to the average amount expended for the past five years, our streets ought to show a marked improvement, if the Street Department be conducted on sound business principles. Sound business principles consist in placing competent men in charge of the expenditure of this large sum of money, to the end that the city shall receive full satisfaction for every dollar expended, whether it be for material purchased or for labor performed. Another important feature in the successful conduct of this department, is to wholly eliminate from it politics both in the purchase of supplies and the employment of labor; if this be done a great change will be produced in the department, which will be highly creditable to our administration. Should the committee on streets decide to do any paving, the coming year, your attention is called to that portion of Western Avenue between School Street and the paved portion of that avenue. Here is an urgent need for paving, because more heavy teams pass over this thoroughfare than any other in the city and the nature of the soil there is such that at times this portion of the avenue is rendered almost impassable. The principal freight depot being located upon this avenue, every citizen, regardless of where his business may be located, has a deep interest in having this avenue properly paved.

I would recommend discontinuing the practice of accepting streets before they have been put at grade, properly graded and made suitable for public travel. The acceptance of unfinished streets has entailed upon the city a heavy and entirely unwarranted expense.

SEWERS.

Of the demands made upon the City Treasury, that for sewers and drains is of great importance, and the demands for these seem to increase from year to year and bids fair to do so for years to come. In most cases the demands are reasonable and just, and in the interest of health and comfort. But to grant all the requests for new sewers, together with the costs of relaying and repairing of many of the old ones, would entail an outlay that would be unjust to our taxpayers, and there would seem to be only one of two courses left for us to pursue—either to adopt the same policy that has been followed for a number of years, that is to compel many of the petitioners for sewers to wait, or to make a loan for the new sewers. The latter course appears to me to be the better one, as sewers are as permanent and as necessary improvements as the water works, and as in the case of the latter project, the expense should be borne by future generations. I am informed that there are a large number of sewers, and in some localities the whole system of sewers, which must soon be relaid at a great cost, which cost must be wholly borne by the city.

These, as well as all ordinary repairs, should be paid for out of our annual tax levy. Our sewerage system has grown from one calculated for a country village, to one for a city of 78,000 inhabitants Many of the old sewers and drains which have been retained during the past years, are wholly inadequate to meet the present needs. The sewerage of a large portion of Belvidere, emptying into the Concord river, has been arranged for at a very small expense in a satisfactory and praiseworthy manner. The expenditures for 1890 were $30,176.60.

SCHOOLS.

Upon our public schools depend the prosperity of our people, and there is no department for whose maintenance the public are so willing to pay as for our schools, provided they are satisfied of the wise and judicious expenditure of the moneys disbursed. The outlay for schools during the year past has been $196,587.48. The evening schools are an important factor in our educational plans, giving as they do a chance for working boys and girls to acquire a good education. Educated labor, commanding as it does a higher price, is one of the best investments for us as a city to make. The evening drawing schools, giving as they do instruction in architectural and mechanical drawing, are especially worthy of commendation and hearty support. The report of the Superintendent of Schools

and of the School Committee will give you full details upon this important subject.

STATE AID.

The whole amount disbursed by this department was $21,414.50. The sums paid for State Aid to those who received pensions from the United States, is repaid by the State, and of the amount paid to those who received no pensions, one-half is repaid by the State to the City.

CITY LIBRARY.

Year after year, the growing collection of books in our public library becomes more cramped in the present narrow quarters. The Library, open free to all, is of great educational value, and properly conducted can be made a great factor for good. In our present inadequate quarters, the Library falls far short of what we may hope and expect it to become when the new library building, now in process of construction, is completed. The free reading rooms for both sexes are well patronized, and are growing in usefulness.

The total disbursements for 1890 were $16,781.40.

LICENSES.

By the laws of the Commonwealth, the Board of Aldermen are authorized to grant licenses for the sale of intoxicating liquors, providing the citizens shall at

the annual balloting upon this question vote "yes," or in favor of granting such licenses. The citizens having voted "yes" by an overwhelming majority, or in favor of the issuance of licenses for the sale of intoxicating liquors, and by this vote have expressed their wishes upon this matter, it only remains for you, as their servants, to see that these licenses are issued to such persons as in your best judgment will conduct their business in strict accordance with the law in all respects. The number to be granted this year is limited to seventy-eight.

The Police Department of the city should be held to a strict accountability for the enforcement of all laws. They are as well able to secure a full compliance with the laws regulating the sale of intoxicating liquors as they are to enforce the other laws which govern this Commonwealth, and this they are expected to do.

CEMETERIES.

The amount expended for the maintenance of the city cemeteries during the past year was $2,755.97.

There seems to be great need of an immediate enlargement of the Edson Cemetery, and if the necessary ground cannot be procured at a satisfactory price by purchase, I would recommend that the City Council take the proper steps to obtain authority to secure it under legislative sanction.

PUBLIC HEALTH.

All matters pertaining to public health are by law placed in charge of the Board of Health. The primary object of the Board of Health is to prevent sickness and reduce the death rate. If this is not done after a term of years, the conclusion must be that the board has failed to accomplish the object intended, and unless some good reason can be shown for the failure, its policy will not meet with public approval. An examination of the several reports of the Board of Health, commencing with 1885, discloses some interesting figures, giving the death rate of the city and expenditures of the Board, a compilation of which is herewith submitted for your consideration:

	DEATH-RATE.	EXPENSES.
1885	20.70	$17,039 88
1886	23.27	18,659 00
1887	24.96	22,912 30
1888	24.51	25,098 84
1889	25.31	*30,773 61
1890	25.24	31,439 86

*Deducting $2,553.01 for bath-houses.

It will be seen that the death rate, which in 1885 was 20.70 per thousand of inhabitants, has increased to 25.24 in 1890, while the expenses of the Board have increased from $17,039.88 in 1885 to $31,439.86 in 1890. We, therefore, find ourselves confronted with these facts, that the expenses of this department have surprisingly increased, while at the same time an alarming increase is also shown in the rate of

mortality; and should both increase at the same rapid rate for the next ten years to come as they have for the five years last past, our citizens will have just cause for alarm from both a mortuary and financial standpoint.

I feel it to be my duty to again call your attention to the fact that the death rate and the expenditures have marched forward, arm in arm, from 1885 to the present time, that you may take into consideration what measures, if any, are needed to be taken to prevent a further increase in either, and to secure a reduction in both.

PAWTUCKET BOULEVARD.

In 1889, a number of public-spirited citizens offered to the city a tract of land to be devoted to what was termed a "Boulevard." When the property was deeded to the city, a condition was placed in the deed, providing that unless the boulevard was graded and otherwise improved, within three years, the land thus deeded should revert to the grantors. At the time of the acceptance by the city, the supposed cost of this project was understood as being very small. It now appears that about $25,000 have already been spent upon it by the city. The best obtainable approximate estimate as to the cost of its completion is placed at $40,000 to $50,000 more. Nor is this all.

The boulevard as projected, skirting as it does the North bank of the Merrimack river, must shed its surface water directly into the river at a point which will render it likely to contaminate our water supply with the drainage of a long roadway, thickly covered with the filth of animals. This being the case, some provision should be made to prevent this accumulation of fecal matter from being washed directly into our filtering chamber and pipes, from which is drawn the water which we drink and use for other domestic purposes.

We find ourselves placed in the position, that unless we complete the roadway in 1891 and 1892, we must, by the terms of the deeds, lose the $25,000 already spent, by the reversion of the land deeded, to the original owners. To raise the large amount of money, say $50,000, estimated as necessary to complete it, by an addition to the tax levy of this year and next, would make a grievous, unjustifiable and unwise addition to the taxes of one or both of these years. To escape this burden, I beg to suggest that as this boulevard is intended for a permanent improvement, a loan sufficient to carry the work onward to completion be made.

FIRE DEPARTMENT.

The great importance of our Fire Department is generally conceded, and to maintain it in the most efficient condition for our needs, appears to be

the wish of our citizens. The protection of our lives and property depends upon this department, and from the best imformation obtainable at the present time I am convinced it is in good condition. The members of the department I believe to be thoroughly efficient and trustworthy men, far above the average for capability and courage. The apparatus for extinguishing fires and saving property are all in good condition, and we may feel secure in the hands of this department.

No need of any extraordinary expenditures for this department for the present year has been called to my attention. The most important additions made during the past year to increase the efficiency of the department have been the placing of Lowry hydrants in the central portions of the city, and the establishment of a two-horse and a one-horse company.

The total expenditures of this department for the year 1890 were $99,928.19, of which $80,000 were obtained by taxation, and $20,000 by loans.

LIGHTING DEPARTMENT.

The total expenses of this department for the past year were $56,286.88. There are 179 electric street lights, 24 more being located but not burning. These lights are furnished the city under a contract executed in 1890, for a term of three years, at the

rate of 40 cents per light per night, the lights burning all night. There are 912 gas street lights, for which the city pays different prices, according to size of light, and there are 433 gasoline lights, mostly located in the outskirts of the city.

While there is an increasing demand for more of all these lights, care should be exercised in the granting of the many petitions and pressing demands from our citizens, for in some instances there is a fanciful rather than a real necessity for street lights.

CITY HALL AND MEMORIAL BUILDINGS.

The construction of the City Hall and Memorial Buildings, in charge of the City Hall Commission, is now fully under way. The amount expended during the year on both structures was $72,573.55.

PAUPERS.

A full report of this department will appear in its annual report, which will give all desired information not at hand at this time. The number of inmates at the City Farm during the past year was 923. The number now there is 346. The gross expenses for the City Farm for the year 1890 were $40,269.05, while the total expenses during 1890 for the Pauper department were $66,214.38.

WATER WORKS.

The subject of supplying the citizens with pure water has attracted the attention of our people for many years. The question of the purity of the city water is one of vital importance to all. The recent prevalence of Typhoid fever has created in some quarters a feeling of distrust as to whether the water furnished by the city is entirely fit for domestic uses. Various analyses and tests made by experts show that the city water of Lowell is better than that furnished by a majority of municipalities, but they also show a slight deterioration. No effort should be spared in this department to take from our water any unhealthful element, either by mechanical filtration or by frequent cleansing of the filter inlet or basin and filter gallery.

The financial condition of this department is good. The total expenses for 1890 were $194,108.32.

SCHOOL-HOUSES.

The school-houses of the city are in fair condition. Three buildings have been completed during the past year — the primary school-houses on Cabot and Cross streets and a four-room addition to the Highland Grammar school-house. Extensive alterations were made in the heating and ventilation of the Edson and Franklin school-houses, rendered

necessary by the recommendation of the State Inspectors of Buildings. Better school-house accommodations are very much needed for the High school. The present building should at once be enlarged or a new building erected upon some other site to accommodate a portion or the whole of our High school classes.

The total outlay for school-houses for 1890 was $82,732.93, taxation providing $25,000 of this, $22,500 having been raised by loans and a balance of $32,987.65 stood to the credit of this appropriation on the first of the year.

COMMONS.

Our Commons are intended for public pleasure grounds and places of public resort for all classes of our citizens, and when neatly kept, well cared for and properly beautified become an attractive source of pleasure to all.

The expenditures for Commons for 1890 were $15,159.23. This, in my judgment, is a much larger sum than is necessary to keep our Commons and Park in a satisfactory condition, and by an examination of the expenditures for the past ten years for this department all will be convinced of this fact.

POLICE.

It is of the highest importance that we should have a Police Department whose efficiency and

honesty are undoubted. We depend upon our Police Department for a full and impartial enforcement of all our laws, and without such a department there would be no security for either life or property. The number of officers should be sufficient to afford all necessary protection, and they should be provided with all needed means to assist them in a faithful and thorough performance of duty.

The regular police force at the present time consists of eighty-three men, comprising one chief, two deputies, three sergeants, four inspectors, two warrant officers, two keepers, one janitor, and sixty patrolmen. There are also five reserve men, and some others, in the service of the department.

The usefulness of the force has recently been largely augmented by the establishment of a partial police telegraph system. When this shall have been completed and extended, so as to properly cover our territory, it will be found to further increase the efficiency of our police force, and all will be surprised that the introduction of this great needed aid to the department has been so long delayed. Our city having a central police station, and not having, as have most cities of its size, several substations, it becomes a necessity that officers in distant portions of the city should have some means of communication with the station, and this need the police telegraph system, when fully completed, will supply.

The details of the department will appear in the annual report. The total expenditures for the past year were $99,839.32. Of this sum $75,000 was appriated, $3,750 by loans, the balance came from fines and other sources.

CONCLUSION.

In conclusion, let us remember that we are here as servants of the whole people and not as partisans. We have taken a solemn oath to conduct the business of the City of Lowell in an honest and frugal manner, and it is in fulfilling the obligation of that oath that we best advance the interests of the community. The City of Lowell possesses splendid advantages for development, and all that is required is that her municipal affairs be so conducted that taxation shall be light and equitable. Let us see to it that the taxpayers receive a dollar's worth in benefits for every dollar taken from them. Let us insist upon keeping our expenses inside the limit of the tax levy. Let us lay aside partisan politics, and as business men conduct the city's affairs just as we do our own. In deeds and not in words, let the government of the City of Lowell, for the year 1891, be one in which every citizen, regardless of party or creed can take just pride.

MUNICIPAL REGISTER;

CONTAINING

RULES AND ORDERS

OF THE

CITY COUNCIL,

AND A LIST OF

THE GOVERNMENT AND OFFICERS OF THE CITY OF LOWELL.

1891.



LOWELL, MASS.
SUN PRESS: HARRINGTON BROS.
1891.

JOINT RULES AND ORDERS OF THE CITY COUNCIL.

1. In the month of January joint standing committees shall be appointed as follows:

A Committee on Accounts,
A Committee on Claims,
A Committee on Education,
A Committee on the Fire Department,
A Committee on Lands and Buildings,
A Committee on Military Affairs,
A Committee on Ordinances and Legislation,
A Committee on Printing,
A Committee on Streets.
A Committee on Commons.

Each committee shall consist of two Aldermen and three members of the Common Council, except the Committee on Streets, which shall consist of two Aldermen and five members of the Common Council.

2. Each board shall, in such manner as it may determine, select its own members for any joint committee.

3. In all joint standing committees, except that on Finance, the member first named in the Board of Aldermen shall be chairman; on the Committee on Finance, the member first named in the Common Council shall be chairman; and in all joint special committees, the member first named in the board where the business originates shall be chairman, and shall call the committee together.

4. Reports of committees shall be made to the board first meeting after such reports are prepared and signed.

5. No committee shall act by separate consultation, and no report shall be received unless agreed to in committee actually assembled.

6. It shall be the duty of every joint committee (the Committee on Streets excepted), to whom any subject may be specially referred, to report thereon within five weeks, or ask for further time.

7. The by-laws of the city shall be termed ordinances; the enacting clause of which shall be—"Be it ordained by the City Council of the City of Lowell, as follows:"

8. An ordinance may originate in either board, and shall be considered in three several stages. It shall first be read for information, and the question shall then be on ordering it to a second reading; but if it has not previously been in the hands of some joint committee, it shall first be so referred. When reported back, the recommendations of the committee shall first be acted on. If it shall then be ordered to a second reading, it shall next be examined by a standing committee of that board, who shall see that it is drawn in proper form. When returned by such committee, the question shall be on ordering it to be enrolled. If so ordered, it shall then be sent to the other board, where the same order of proceeding shall be observed. When it has been ordered by both branches to be enrolled, it shall be enrolled by the Clerk of the Common Council, and shall be by him submitted to the proper committee of that board, to ascertain if it has been correctly enrolled. If so reported, the question shall be on passing it to be ordained. If it shall so pass, it shall be signed by the President of the Common Council, and be sent to the Board of Aldermen, where it shall take a like course. If passed to be ordained in that board, it shall be signed by the Chairman of the Board of Aldermen, and be sent to the Mayor for his approval.

9. Every joint resolution shall be read in the board in which it is introduced, and the question shall be upon ordering it to a second reading. If so ordered, the question shall then be upon its passage. If passed, it shall be sent to the other board, where the order of proceeding shall be the same. When passed by both boards, the resolution shall be presented to the Mayor for his approval, and when the same shall be in force, shall be enrolled by the Clerk of the Common Council, and when found correctly enrolled as provided in the case of an ordinance it shall be signed by the President of the Common Council and the Chairman of the Board of Aldermen, and be presented to the Mayor for his signature, if he approved the original.

10. Joint orders shall require but one reading, and when adopted, shall be sent to the Mayor for his approval, except when they relate to a question of a convention of the two branches, or the election of any officer.

11. An ordinance may be rejected in any stage, but may not pass through all its stages in the same day.

12. Every appropriation of money exceeding fifty dollars shall be by resolution.

13. Each board shall transmit to the other all papers on which any ordinance, joint resolution, or order, shall be founded; and all papers, on their passage between the two boards, shall be under the signature of their respective clerks, except ordinances and joint resolutions in their last stage, which shall be signed by the presiding officers. If papers come before either board which have been duly acted upon in the other board, the presiding officer shall so state without reading the endorsements of the clerk, unless the latter are called for.

14. All enrolled ordinances shall be written in a fair and legible hand, without interlineations or erasures, and no enrolled ordinance or resolution shall be amended.

15. When either board does not concur with the other in any ordinance or resolution sent from the other, notice of such non-concurrence shall be given by a written message.

16. In any case of non-concurrence, each board may appoint a Committee of Conference. Such committee shall consist, in each case, of three members who support the vote of their own board. These two committees may meet jointly or separately, and a majority of each shall decide its action.

17. No committee shall enter into any contract with any of its members, or purchase, or authorize the purchase of, any article therefrom.

18. No chairman of any committee shall audit or approve any bill or account against the city, for any supplies or services, which shall not have been ordered or authorized by the committee.

19. All reports and other papers submitted to the City Council shall be written in a fair hand, without endorsement, except in case of the introduction of an order or resolution. In such case, the member introducing an order or resolution shall subscribe his name at the bottom of the back of the same. All other endorsements upon the back of papers shall be made by the clerk; and the clerks of the boards respectively shall, on seasonable notice, make copies of any papers to be reported by committees, at the request of the respective chairmen thereof.

20. No business shall be transacted by the City Council in convention, except such as shall have been previously agreed on, unless by unanimous consent.

21. After the annual appropriations shall have been passed, no subsequent expenditure shall be authorized for any object, unless provision for the same shall be made by a specific transfer from some of the appropriations contained in the annual resolution, or by expressly creating therefor a city debt; but no such debt shall be created unless the resolution authorizing

the same pass by the affirmative votes of two-thirds of the whole number of each branch of the City Council, said votes, to be taken by yeas and nays, excepting in cases of appropriations for the providing of armories for the use of military companies, for the celebration of holidays, and for other purposes of a public nature, when a vote of two-thirds of the members of each branch of the City Council present and voting shall be sufficient; but the amount of such appropriations named in this clause shall not exceed one-fiftieth part of one per cent. of the valuation of the city for the same year.

22. In ballotings in joint convention, blanks shall not be counted.

23. When both boards are in session at the same time, neither shall adjourn without giving notice to the other of its intention.

24. Reports of city officers, after being presented, shall remain in the office of the City Clerk two weeks before being printed.

25. All papers, of whatever description, relating to business requiring concurrent action of both boards of the City Council must be presented to the City Clerk, or the Clerk of the Common Council, not latter than noon on the day the meeting is to be held. Petitions, reports or other papers, presented after that hour will not be taken up for action thereon until the next meeting

26. These rules may be suspended for a specific purpose, or amended, whenever twenty-two members of a joint convention of the two branches shall so direct, or whenever a joint order to that effect shall be passed by the votes of six members of the Board of Aldermen and sixteen members of the Common Council.

RULES AND ORDERS OF THE BOARD OF ALDERMEN.

1. At the appointed time the presiding officer shall take the chair, and, on the appearance of a quorum, proceed to business.

2. The order of business shall be as follows:—

First.—At all regular meetings the journal of the last regular meeting and all intervening meetings of the board, shall be approved without reading, unless the reading be called for by some member of the board.

Second.—Petitions and similar papers.

Third.—Appointments, elections, etc.

Fourth.—New business, which, unless otherwise ordered, will take its place at the foot of the Orders of the Day.

Fifth.—Orders of the Day, consisting of unfinished business of the last previous meeting, papers from the Common Council, and such matters as have been introduced as new business. By a vote of six members, any matters in the Orders of the Day, may at any time be taken up for immediate consideration.

3. The presiding officer shall decide all points of order, subject to appeal. He may read while sitting, but must rise to put a question He shall allow debate on a question until the vote has been declared, but not on the verification of a vote; and on a demand of two members, shall take every vote by yeas and nays.

4. When a question is under debate, the presiding officer shall receive no motion but to adjourn, to take up a special

assignment, to lay on the table, to postpone to a day certain, to commit, to amend, or to postpone indefinitely. These several motions shall have precedence in the foregoing order, and debate upon any of them shall be confined to the actual motion, and shall not go into the merits of the main question, except on amendment.

5. When a vote has passed, except for adjournment or to lay on the table. any member voting with the majority may move a reconsideration, to be acted upon at the same meeting. Any member voting with the minority may move a reconsideration, to be acted upon at the next meeting which latter motion shall have priority, if made before the motion first mentioned shall have been decided. No motion shall be twice reconsidered.

6. No member shall be interrupted while speaking, but by a call to order, or for the correction of a mistake; nor shall there be any conversation among the members while a paper is being read or a question stated from the chair.

7. When any member is about to speak in debate, he shall rise in his place and respectfully address the presiding officer, shall confine himself to the question under debate, and avoid personality.

8. In the month of January the following committees shall be appointed:—

A Committee on Bills in Second Reading,
A Committee on Electric Wires,
A Committee on Enrollment,
A Committee on Licenses,
A Committee on Lighting Streets,
A Committee on Police,
A Committee on Repairs of Streets,
A Committee on Sewers,
A Committee on Weights and Measures,
A Committee on State Aid.

The Committees on Licenses, on Police, on Sewers and on Electric Wires shall consist of three members each; the other committees shall be composed of two each.

9. Every member present shall be held obliged to vote on all questions, and not to leave without permission, if his presence is necessary to make a quorum.

10. The clerk shall prepare for the use of the board, a copy of the Orders of the Day, to which shall be added a list of matters laid on the table or postponed to a day certain.

11. When a reference is proposed to more than one committee the question shall first be upon a standing committee of the board, then a special committee, then a joint standing committee and last a joint special committee.

12. These rules may be amended or suspended whenever two-thirds of the members present may so vote; but a motion to amend shall not be made and finally acted upon at the same meeting.

13. All petitions for the appointment or removal of police officers and watchmen shall, before action thereon is taken by the board, be referred to the Committee on Police.

14. All nominations of persons to serve as police officers and watchmen shall, before action thereon by the board, be referred to the Committee on Police, who shall report upon such nominations at or before the next regular meeting after such reference.

15. All papers, of whatever description, which may require action by this board, shall be presented to the City Clerk not later than the hour of noon on the day of each regular meeting. Petitions, reports and other papers, presented after that hour on such day, will not be considered until the next meeting.

RULES AND ORDERS OF THE COMMON COUNCIL.

1. The President shall take the chair precisely at the hour appointed for the meeting, call the members to order, and within ten minutes (or sooner, if a quorum be present,) he shall cause the roll to be called, and the names of absentees recorded. The first business after the roll-call shall be the approval of the records of the previous meeting, which shall be approved without reading, unless their reading be called for by some member. In the absence of the President the oldest member present shall call the Council to order, and preside until a President *pro tempore* be chosen.

2. He shall preserve order and decorum; may speak to points of order in preference to other members, rising from his seat for that purpose, and shall decide questions of order, subject to an appeal to the Council by any member.

3. He shall rise to address the Council, to state facts, but may put questions, or read, sitting.

4. He shall declare all votes; but if a vote be doubted, the President shall, without further debate, require the members voting in the affirmative and negative to rise and stand until they are counted, and he shall declare the result.

5. He may call any member to the chair, but such substitution shall not extend beyond an adjournment, and when out of the chair, the President may express his opinion on any subject under debate, and he shall not resume the chair while the same question is pending.

6. All questions shall be propounded in the order in which

they are moved, unless the subsequent motion be previous in its nature.

7. After a motion is stated by the President, it shall be disposed of by a vote of the Council, unless the mover withdraw it before a decision or amendment.

8. A motion to adjourn shall always be in order; that and the motion to lay on the table shall be decided without debate.

9. The previous question shall be in this form: "Shall the main question be now put?" It shall only be admitted when demanded by a majority of members present, and, until it is decided, shall preclude all amendment and further debate of the main question.

10. The yeas and nays shall be taken on any questions upon the request of one-third of the members present.

11. When two or more members happen to rise at the same time, the President shall name the member who shall speak first.

12. When any member is about to speak in debate, or deliver any matter to the Council, he shall rise in his place, and respectfully address the presiding officer, confining himself to the question under debate, and avoid personality.

13. No member shall be mentioned in debate by his name, but may be described by the place he sits in, or such other designation as may be intelligible and respectful.

14. No member speaking shall be interrupted by another, but by a call to order or to correct a mistake. If any member, in speaking or otherwise, transgresses the Rules of the Council, the President shall, or any member may, call him to order; in which case the member so called to order shall immediately be seated, until the question of order is decided. If the decision be in favor of the member called to order he shall be at liberty to proceed; if otherwise, he shall not proceed without the leave of the Council.

15. No member shall speak more than twice to the same question without obtaining leave of the Council.

16. Whilst the President or any member is speaking none shall stand up or pass unnecessarily before the person speaking.

17. Every motion shall be reduced to writing, if the President or any member require it.

18. When a question is under debate, no motion shall be received but to adjourn, to lay on the table, for the previous question, to postpone to a certain day, to commit, to amend, or to postpone indefinitely; which several motions shall have precedence in the order in which they are arranged; and no motion to postpone or commit shall be allowed twice in the same day, in the same stage of the ordinance or proposition

19. When a vote has passed, except for adjournment or to lay on the table, any member voting with the majority may move a reconsideration, to be acted upon at the same meeting. Any member voting with the minority may move a reconsideration, to be acted upon at the next meeting; which latter motion shall have priority, if made before the motion first mentioned shall have been decided. No motion shall be twice reconsidered.

20. Every member who shall be in the Council when a question is put shall give his vote, unless the Council, for special reasons, excuse him.

21. No motion or proposition, on a subject different from that under consideration, shall be admitted under color of an amendment.

22. All reports may be committed or recommitted at the pleasure of the Council.

23. The division of a question may be called for when the sense will admit of it.

24. When the reading of a paper is called for and objected to, it shall be determined by a vote of the council.

25. No standing order of the Council shall be suspended, unless three-fourths of the members present consent thereto; nor shall any rule or order be repealed or amended without one day's notice being given of the motion therefor, nor unless a majority of the whole Council concur therein.

26. All committees, except such as the Council determine to select by ballot, shall be nominated by the President.

27. No member shall be obliged to serve on more than two committees at the same time, or be chairman of more than one.

28. All memorials and other papers addressed to the Council shall be presented by the President, or by a member in his place, who shall explain the subject thereof; and they shall be taken up in the order in which they were presented, unless the Council shall otherwise direct.

29. Standing committees shall be appointed on the following subjects:—

On Second Reading of Bills and Ordinances,
On Enrollment,
On Elections and Returns.

30. No committee shall sit during the sittings of the Council without special leave, except the Committee on the Second Reading of Bills and Ordinances and the Committee on Enrollment.

31. The rules of proceeding in the Council shall be observed in the Committee of the Whole, so far as they are applicable except the rule limiting the time of speaking.

32. When a committee is nominated by the chair, the person first named shall be chairman. In election of committees by ballot, when a chairman is not specially chosen, the person having the highest number of votes shall act as chairman; and in case of an equality in votes between two or more members of a committee, the members thereof shall choose a chairman.

33. All ordinances and resolutions shall have two several readings before they shall be finally passed by this Council.

34. All ordinances before being read a second time, shall be referred to the Committee on the Second Reading of Bills and Ordinances, and after being reported upon by said committee, shall be again read, after which second reading the question shall be on passing the same to be enrolled.

35. No ordinance or resolution imposing penalties, or authorizing the expenditure of money, shall have more than one reading the same day.

36. The seats of the Common Council shall be numbered and determined by lot, and no member shall change his seat but by permission of the President.

37. All committees of the Council shall consist of three members, unless a different number be specially ordered; and no report shall be received from any committee unless agreed to in committee actually assembled; and all reports shall be in writing.

38. It shall be the duty of every committee of the Council, to whom any subject may be specially referred, to report thereon within five weeks, or ask for further time.

39. The clerk shall keep brief minutes of the votes and proceedings of the Council, entering thereon all accepted resolutions; shall notice reports and memorials, and other papers submitted to the board, only by their titles, or a brief description of their purport.

40. All salary officers shall be chosen by written or printed ballots; and in the election of any officers by ballot, blanks shall not be counted.

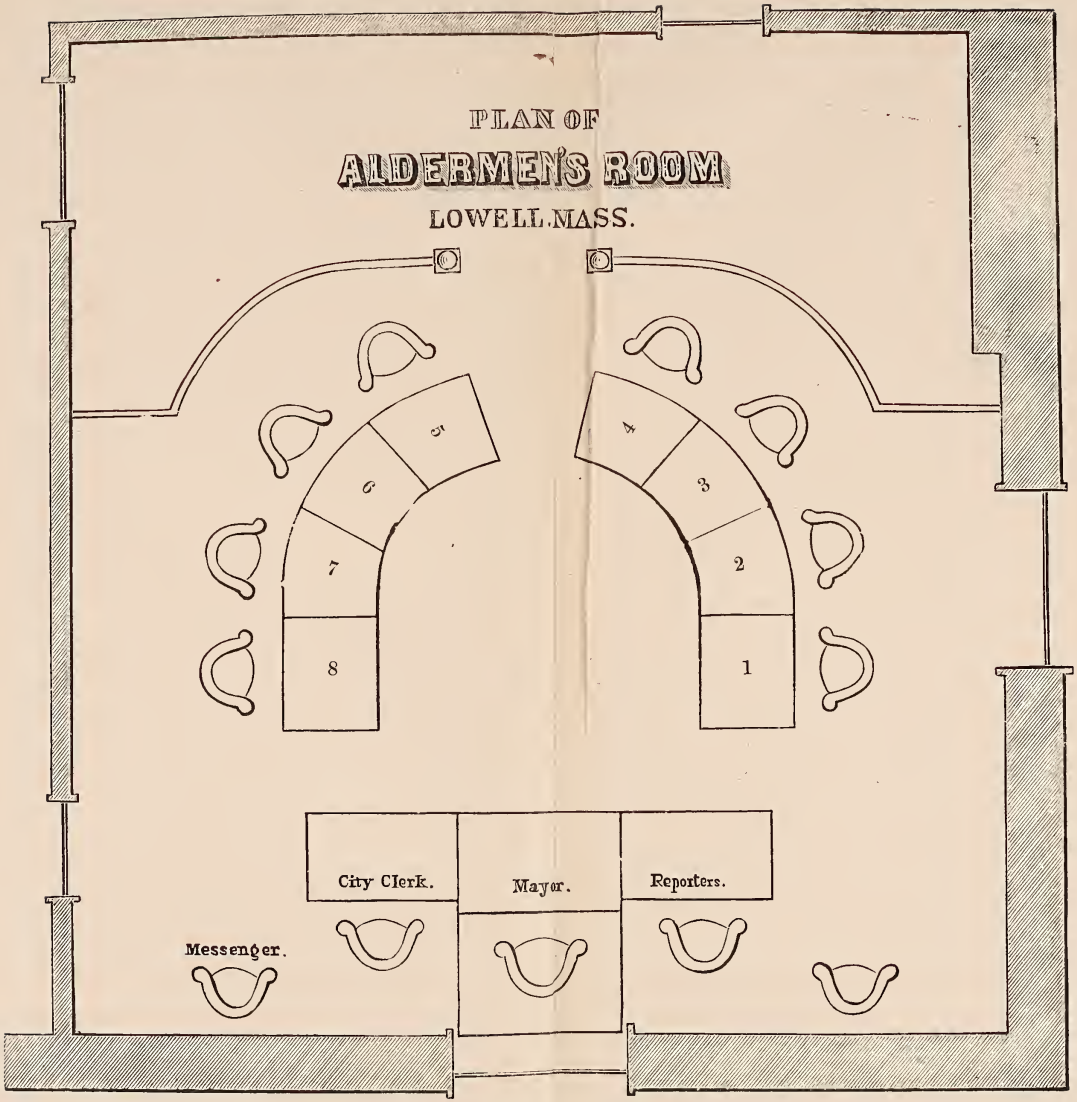
41. Members of the Council may attend meetings of any of its committees, but shall not vote thereat.

42. The clerk of the Common Council shall keep the record of committees who may require that service; and on the appointment of every standing committee, a book for records shall be

provided by its chairman, or by said clerk. The clerk shall have the custody of all minutes by him kept ; and the records of the several committees shall be open to the inspection of the members of the City Council.

43. Any member offering a resolution shall write his name on the bottom of the back of such resolution.

44. With the exception of an order for a joint convention, any joint order originating in the Common Council shall be copied, and shall, previous to the hour for calling the meeting to order, be posted in some prominent place in the Council Chamber, where it may be open to the inspection of the members.



GEORGE W. FIFIELD,

Mayor.

1—Jeremiah Crowley.
2—Stephen B. Puffer.
3—George H. Frye.
4—Richard B. Allen.
5—Thomas J. Enright.
6—James W. Cassidy.
7—George F. Tilton.
8—Watson A. Dickinson.

Michael J. Dowd, *Clerk.*

Charles Howard, *Chief of Police.*

CITY GOVERNMENT FOR 1891.

MAYOR:

GEORGE W. FIFIELD.

576 Middlesex Street.

BOARD OF ALDERMEN.

RICHARD B. ALLEN ..... 24 Wamesit Street
JAMES W. CASSIDY ..... Mt. Grove Street
WATSON A. DICKINSON ..... 80 Branch Street
THOMAS J. ENRIGHT ..... 23 Suffolk Street
GEORGE H. FRYE ..... 28 Second Street
STEPHEN B. PUFFER ..... 424 Middlesex Street
GEORGE F. TILTON ..... 12 Quebec Street
JEREMIAH CROWLEY ..... *Chairman.*
MICHAEL J. DOWD ..... *Clerk.*

COMMON COUNCIL.

Ward One.

PATRICK H. BARRY ..... 3 Lagrange Street
JAMES F. DOHERTY ..... 59 Adams Street
PETER F. GARRITY ..... 50 Merrimack Corp.
JOHN J. SULLIVAN ..... 58 Lewis Street

Ward Two.

NEWELL ABARE ..... 70 French Street
ADOLPHE BENARD ..... 321 Lakeview Avenue
WALTER C. COBURN ..... 64 Bridge Street
GEORGE H. MARSTON ..... 207 Bridge Street

Ward Three.

PATRICK J. BAXTER.....4 Cedar Street
JOHN J. GILBRIDE.....408 Central Street
CHARLES L. MARREN.....66 Linden Street
THOMAS J. SPARKS.....145 Lawrence Street

Ward Four.

EDWIN L. GILES.....35 Mason Street
FRED. HORNE.....128 Westford Street
WALLACE G. PARKIN.....7 Lane Street
EUGENE C. WALLACE.....10 Hamilton Corp.

Ward Five.

HERBERT M. JACOBS.....107 Salem Street
GEORGE D. KIMBALL.....391 Merrimack Street
JAMES A. SPIERS.....8 Phillips Street
LOUIS P. TURCOTTE.....12 Second Avenue

Ward Six.

JAMES A. CAWLEY.....79 Andover Street
JAMES J. DOLAN.....86 Concord Street
DANIEL D. DRISCOLL.....119 Concord Street
JAMES GOOKIN.....Cor. Sherman and Concord Streets
THOMAS J. SPARKS.....*President*
DAVID CHASE.....*Clerk*

MEETINGS OF THE CITY COUNCIL.

The regular meetings of the City Council are held at the City Hall as follows:—

Board of Aldermen.

January.....6 and 20	July.....7 and 21
February.....3 and 17	September.....1 and 15
March.....3 and 17	October.....6 and 20

April.....7 and 21
May.....5 and 19
June.....2 and 16
November.....3 and 17
December.....1 and 15

At 7.30 P. M.

Common Council.

January.....13 and 27
February.....10 and 24
March.....10 and 24
April.....14 and 28
May.....12 and 26
June.....9 and 23
July.....14 and 28
September.....8 and 22
October.....13 and 27
November.....10 and 24
December.....8 and 22

At 8 P. M.

JOINT STANDING COMMITTEES OF THE CITY COUNCIL.

FINANCE—The Mayor and Alderman Puffer; Councilmen Marren, Coburn and Gookin.

APPROPRIATIONS—The Mayor and Aldermen Puffer, Frye, Tilton and Crowley; Councilmen Marren, Driscoll, Gookin and Abare.

ACCOUNTS—Aldermen Enright and Cassidy; Councilmen Gilbride, Horne and Baxter.

CLAIMS—Aldermen Enright and Allen; Councilmen Sullivan, Jacobs and Cawley.

COMMONS—Aldermen Allen and Crowley; Councilmen Barry, Abare and Marren.

EDUCATION—Aldermen Allen and Frye; Councilmen Gookin, Giles and Driscoll.

FIRE DEPARTMENT—Aldermen Dickinson and Cassidy; Councilmen Marren, Driscoll and Baxter.

LANDS AND BUILDINGS—Aldermen Frye and Cassidy; Councilmen Gookin, Doherty and Wallace.

MILITARY AFFAIRS—Aldermen Tilton and Crowley; Councilmen Driscoll, Jacobs and Kimball.

ORDINANCES AND LEGISLATION—Aldermen Crowley and Tilton; Councilmen Cawley, Marston and Sullivan.

PRINTING—Aldermen Enright and Cassidy; Councilmen Barry, Parkin and Gookin.

STREETS—Aldermen Puffer and Allen; Councilmen Gilbride, Garrity, Dolan, Turcotte and Coburn.

STANDING COMMITTEES OF THE BOARD OF ALDERMEN.

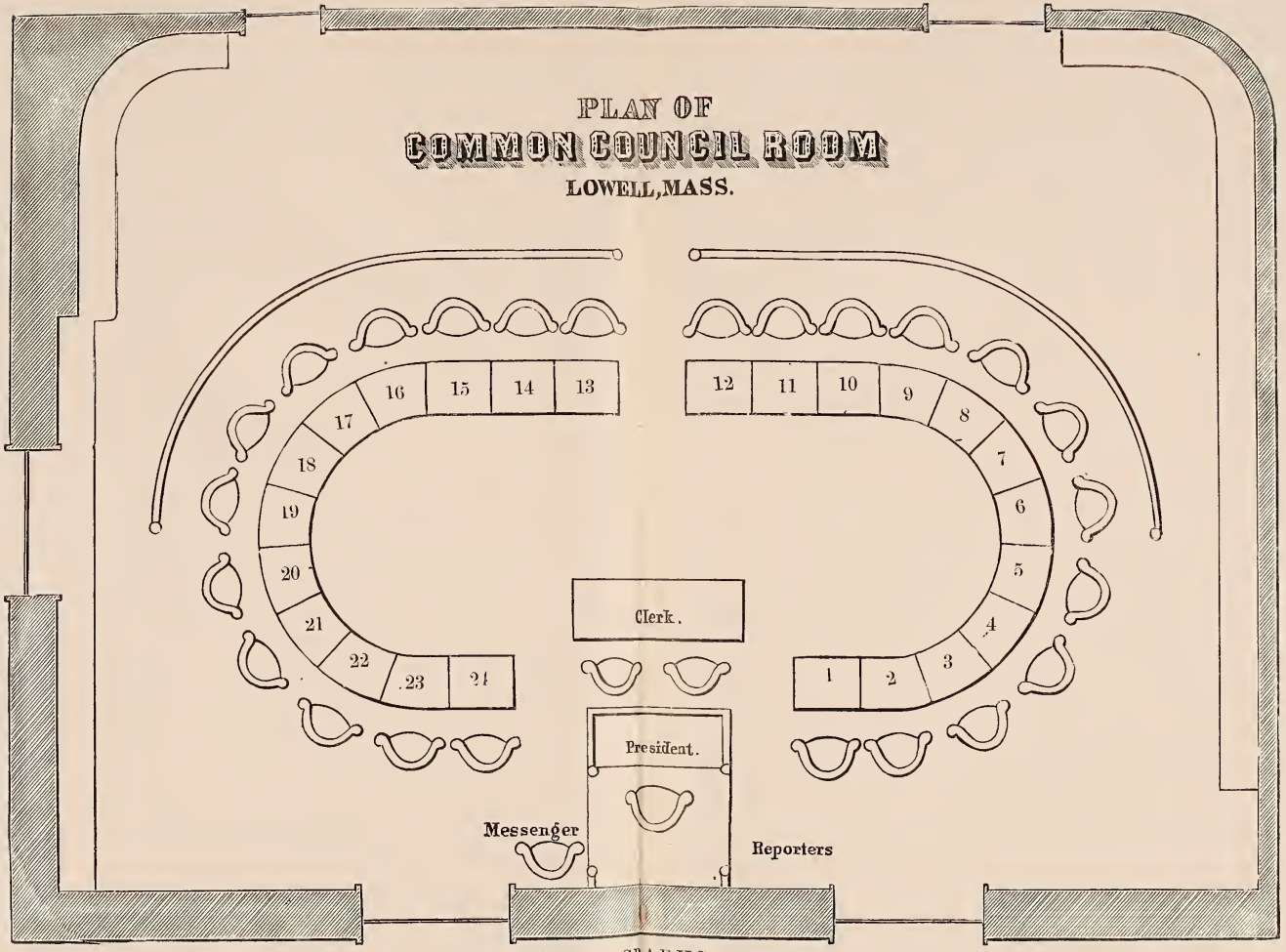
BILLS IN SECOND READING—Aldermen Frye and Tilton.
ELECTRIC WIRES—Aldermen Dickinson, Frye and Allen.
ENROLLMENT—Aldermen Cassidy and Frye.
LICENSE—Aldermen Enright, Cassidy and Dickinson.
LIGHTING STREETS—Aldermen Tilton and Dickinson.
POLICE—Aldermen Crowley, Allen and Puffer.
REPAIRS OF STREETS—Aldermen Allen and Puffer.
SEWERS—Aldermen Tilton, Allen and Puffer.
STATE AID—Aldermen Crowley and Tilton.
WEIGHTS AND MEASURES—Aldermen Dickinson and Frye.

STANDING COMMITTEES OF COMMON COUNCIL.

BILLS IN SECOND READING—Councilmen Cawley, Sullivan and Speirs.

ELECTIONS AND RETURNS—Councilmen Benard, Sullivan and Speirs.

ENROLLMENT—Councilmen Cawley, Barry and Marston.



THOMAS J. SPARKS, *President.*

1—George H. Marston.
2—Adolphe Benard.
3—George D. Kimball.
4—Herbert M. Jacobs.
5—Walter C. Coburn.
6—Newell Abare.
7—Edwin L. Giles.
8—Eugene C. Wallace.
9—Wallace G. Parkin.
10—James A. Speirs.
11—Louis P. Turcotte.
12—Fred Horne.
13—Vacant.
14—Patrick J. Baxter.
15—John J. Gilbride.
16—James F Doherty.
17—James J Dolan.
18—John J. Sullivan.
19—Peter F. Garrity.
20—Charles L. Marren.
21—Patrick H. Barry.
22—Daniel D. Driscoll.
23—James A. Cawley.
24—James Gookin.

David Chase, *Clerk.*
Henry Hoole, *Messenger.*

CITY OFFICERS, 1891.

CITY CLERK.

MICHAEL J. DOWD.....Office, City Hall

Chosen by the City Council in convention in January. City Charter, Sect. 17.

CITY TREASURER AND COLLECTOR OF TAXES.

AUSTIN K. CHADWICK.....Office, City Hall

Chosen by the City Council in convention in January. City Charter, Sect. 17. Deputy Collectors are selected and appointed by the Treasurer and Collector.

AUDITOR OF ACCOUNTS.

DAVID CHASE.....Office, City Hall

Chosen by concurrent vote in January or February. Ord., Chap. 2, Sect. 1.

SUPERINTENDENT OF STREETS.

HORACE P. BEALS...Office, at City Engineer's Room, City Hall

Chosen by concurrent vote in January or February. Ord., Chap. 35, Sect. 1.

SURVEYORS OF HIGHWAYS.

Aldermen STEPHEN B. PUFFER; Councilmen PETER F. GARRITY and LOUIS P. TURCOTTE.

Chosen by concurrent vote in January or February. City Charter, Sect. 17; Ord., Chap. 35, Sect. 1.

CIVIL ENGINEER FOR THE CITY.

GEORGE BOWERS.....Office, City Hall

Chosen by concurrent vote in January or February, Ord., Chap. 13, Sect. 1.

CITY MESSENGER.

HENRY HOOLE.....Office, City Hall

Chosen by concurrent vote in January. Ord., Chap. 10, Sect. 1.

CITY SOLICITOR.

JOHN J. HOGAN.....Central Street

Chosen by concurrent vote in January or February. Ord., Chap. 11, Sect. 1.

LIBRARIAN OF THE CITY LIBRARY.

FREDERICK A. CHASE.....Office at the Library

Chosen by Board of Trustees of City Library.

TRUSTEES LOWELL CITY LIBRARY.

GEORGE W. FIFIELD, Mayor, *Ex-Officio*.....*Chairman.*

LARKIN T. TRULL.....*Secretary.*

	Term Exp.
THOMAS WALSH	1892
FRANK P. PUTNAM	1893
GEORGE F. RICHARDSON	1894
LARKIN T. TRULL	1895
STEPHEN J. JOHNSON	1896

Appointed by the Mayor in December.

Regular meeting last Tuesday in each month.

SUPERINTENDENT OF PUBLIC BUILDINGS.

RICHARD BRAY....Office, City Hall, entrance City Hall Avenue

Chosen by concurrent vote in January or February. Ord. Chap. 5, Sect. 1.

CITY PHYSICIAN.

WM. P. LAWLOR.....Office, Board of Health

Appointed by the Mayor and Aldermen, January, 1891, for three years. Public Statues, Chap. 80, Sect. 15.

SUPERINTENDENT OF BURIALS.

FEDERICK A. BATES.....Office, Board of Health

Chosen by Concurrent vote in January or February. Ord., Chap. 4, Sect. 1.

ASSESSORS OF TAXES.

Office, City Hall, Third Floor.

JAMES SCOTT.....Term Expires 1892
ABEL WHEELER..... " " 1893
NATHAN D. PRATT..... " " 1894

ABEL WHEELER.....*Chairman.*
JAMES SCOTT.....*Secretary.*
STEPHEN J. KIRBY.....*Clerk.*

Chosen by Concurrent vote in January or February, one member retiring annually. Ord. 1890.

ASSISTANT ASSESSORS OF TAXES.

WARD One.....MICHAEL J. GARVEY
" Two.....ROBERT L. READ
" Three.....JOHN E. MAGUIRE
" Four.....C. ARTHUR ABBOTT
" Five.....GEORGE S. CHENEY
" Six.....FRED N. EDGELL

Term expires first Monday in January 1893. Nominated by the Mayor and confirmed by the Board of Aldermen biennially. Ord. 1890.

OVERSEERS OF THE POOR.

Office, City Hall, corner City Hall Avenue and Merrimack Street.

GEORGE W. FIFIELD, Mayor,.....*Ex-Officio*
JAMES S HANSON.....Term Expires 1890
ALFRED LEBLANC..... " " 1890

CHARLES F. VARNUM ..... " " 1890
WILLIAM H. I. HAYES ..... " " 1891
ELWYN W. LOVEJOY ..... " " 1891
FREEMAN W. PUFFER ..... " " 1891

GEORGE W. FIFIELD, *Chairman.* CHAS. H. RICHARDSON, *Secretary.*

Chosen for two years in January one-half retiring annually. City Charter, Sect. 29. Regular meeting last week-day of the month, at City Farm.

Secretary's office, City Hall, corner City Hall Avenue and Merrimack Street. Office hours, 9 A. M. to 3 P. M. Applications for relief in the forenoon only.

JAMES F. WALSH and NELLIE A. KEYES, *Clerks.*

List of Committees.

ACCOUNTS — Leblanc, Hanson, Varnum.
OUTDOOR RELIEF — Mayor, Lovejoy, Leblanc.
AGRICULTURE — Puffer, Hanson, Lovejoy.
CARE AND REPAIR OF BUILDINGS — Puffer, Hanson, Hayes.
CLOTHING — Hanson, Leblanc, Puffer.
PROVISIONS AND SUPPLIES — Mayor, Lovejoy, Varnum.
DISPENSARY — Hayes, Leblanc, Lovejoy.
WOOD YARD — Lovejoy, Varnum, Hayes.

Ward Physicians.

WARD 1—A. E. GILLARD ..... 53 Merrimack Street
" 2—A. J. HALPIN ..... 14 Central Street
" 3—T. E. MCOWEN ..... 88 South Street
" 4—W. G. EATON ..... 195 Middlesex Street
" 5—W. A. JOHNSON ..... 19 Kirk Street
" 6—CHARLES H. RICKER ..... 2 Wyman's Exchange

City Dispensary.

Police Building ..... Market Street

WILLIAM H. SHEEHAN, *Clerk.*

Open week days — 9 A. M. to 1 P. M., and 2.30 to 6.30 P. M. Open Sundays — 8 to 10 A. M., and 2 to 4 P. M.

Dispensary Physicians.

Doctors Colton, Ricker, McOwen, Spalding, Viles, W. A. Johnson, Patterson, Willard, Gillard, Eaton, Frye and Halpin.

DR. CHAS. H. RICKER, *Secretary.*

INSTITUTIONS AND OFFICERS AT CITY FARM.

The institutions consist of the Almshouse, a Workhouse used for the imprisonment of certain convicts, and "The House for the Employment and Reformation of Juvenile Offenders in the City of Lowell." The farm embraces about one hundred and twenty-five acres, seventy-five of which are in a high state of cultivation.

ALBERT PINDER, *Superintendent.*

WILLIAM A. LANG, *Chaplain and Teacher of Reform School.*

Appointed by the Overseers of the Poor, annually, at the last meeting in December.

There are also one Male Assistant and one Female Assistant; appointed by the Overseers of the Poor, annually, at the last meeting in December.

MEMBERS OF THE LOWELL WATER BOARD.

Office, City Hall.

MILES F. BRENNAN..... *President.*

From the Board of Aldermen: RICHARD B. ALLEN.

From the Citizens:

JOHN STOTT.....	Term	expires	1892
ARTHUR F. SALMON.....	"	"	1893
EDWARD W. THOMAS.....	"	"	1894
MILES F. BRENNAN.....	"	"	1895

CHARLES L. KNAPP, *Clerk.*

SAMUEL P. GRIFFIN, *Superintendent.*

The members of the Lowell Water Board are chosen by concurrent vote in January or February
The Superintendent is chosen in March by the Board.
The Clerk is chosen by the Board. Ord. amending Chap. 39 of the Revised Ordinances.

COMMISSIONERS OF SINKING FUND.

ALFRED M. CHADWICK.....Term expires 1892
JAMES C. ABBOTT..... " " 1893
HENRY G. CUSHING..... " " 1894

AUSTIN K. CHADWICK, *Secretary and Treasurer.*

The Commissioners are elected under the provisions of Chapter 29 of the Public Statutes, Sect. 10.

BOARD OF CIVIL SERVICE EXAMINERS.

JOHN J. COLTON, M. D., CHARLES H. CONANT, JOSEPH SMITH.
CHARLES H. CONANT, *Secretary.*

FIRE DEPARTMENT, 1890-91.

The Chief Engineer is appointed by the Mayor and Aldermen in the month of March or April, for the term of three years from the first day of May next succeeding.

The Assistant Engineers are appointed annually by the Mayor and Aldermen in the month of March or April, for the term of one year from the first day of May next succeeding. All other members of the Fire Department are nominated by the Board of Engineers, and appointed by the Mayor and Aldermen; and vacancies may be filled.

City Charter, Sect. 31; Ord., Amending Chap. 20, Sect. 1; Pub. Stat., Chap. 35.

Chief Engineer.

EDWARD S. HOSMER.....12 Livermore Street

Office, Engine House, Middle Street,

Assistant Engineers.

JAMES F. NORTON.....18 Ames Street
GEORGE F. SALMON.....24 Mt. Washington Street
EDWARD MELOY.....68 Charles Street
HENRY W. BURTON.....4 Kimball Avenue

JAMES F. NORTON, *Clerk of the Board.*

The Clerk is chosen by the Engineers.

Operator of the Fire-Alarm Telegraph.

G. B. WHITNEY.....Residence, 80 Middle Street

Committee on Fire Department.

Aldermen DICKINSON and CASSIDY; Councilmen MARREN, DRISCOLL and BAXTER.

POLICE DEPARTMENT.

City Charter, Sect. 19; Ord., Chap. 28, Sect. 4; Chap. 279, Acts of 1867.

The members of this Department, except the Chief of Police, are appointed by the Mayor and Aldermen as police officers and watchmen, with all the powers of constables, except the power of serving and executing civil process, and hold their offices during the pleasure of the Board of Aldermen.

Police Roll

CHARLES HOWARD, Chief of Police.....34 Livingston Street
JAMES A. MCQUADE. Sen. Deputy.....95 Concord Street
GEORGE R. DAVIS, Jun. Dep. Chief of Police...11 Huntington Street
FRANK GOODWIN, Inspector of Police (Liquor)..115 Appleton Street
DANIEL M. HAYES, Inspector of Police.....
CHARLES LAFLAMME, Inspector of Police.....120 School Street
GEORGE B. PALMER, Inspector of Police (Liquor)...Aiken Avenue
JAMES DUNLAVY, Sergeant of Police.....119 Cross Street
WILLIAM R. KEW, Sergeant of Police... ....65 Princeton Street
JAMES E. WEBSTER, Sergeant of Police.....205 Westford Street
JACOB G. FAVOR, Warrant Officer.....65 Chelmsford Street
PETER CAWLEY, Warrant Officer.....46 Appleton Street
ISAAC L. LIBBY, Court Officer and Janitor.....11 Coral Street
JAMES MCLAUGHLIN, Keeper.....170 Stackpole Street

Patrolmen.

ALLEN, THOMAS E.....16 West Street
BILLS, EDGAR L.....140 Moody Street
BLOOD, JOSIAH S.....10 Coral Street

Boyle, James.....126 River Street
Brady, Patrick H.....34 London Street
Breault, Eloi N.....122 School Street
Brosnan, James.....99 Concord Street
Bumps, Wm. G.....3 Durant Street
Clement, Horace W.....27 Hildreth Street
Collins, Cornelius E.....14 Ames Street
Connors, Martin.....34 Pond Street
Corcoran, Peter T.....160 High Street
Creahin, John.....335 West Pine Street
Crowley, John B.....222 Market Street
Crowley, John J .....18 Walnut Street
Dennett, John S.....3 and 4 Mass. Corp.
Donaldson, David J.....47 Pleasant Street
Downey, Hugh.....9 Chestnut Street
Dunfey, John M..... Fourth Avenue
Durrough, John.....6 Fay Street
Farrington, Henry.....5 Coral Street
Fitzpatrick, Patrick.....20 West Pine Street
Fox, Edward.....Lawrence Street
Furlong, John C.....141 School Street
Gallivan, John F.....120 School Street
Gardner, Willis L.....16 Billings Street
Goodhue, David H.....163 School Street
Grady, William H.....15 Lundberg Street
Gregg, Charles.....58 Fort Hill Avenue
Grinnell, Enoch N.....46 Appleton Street
Hickson, John.....Mammoth Road
Holland, James E.....Mammoth Road
Holman, Alfred M.....1 Powell Street
Howard, Cornelius.....67 Whipple Street
Hubin, John D.....8 Chapel Street
Ingalls, Lindsey E.....113 Coburn Street
Ingalls, Thomas.....25 West Fourth Street
Jones, William B.....101 Branch Street

LENNON, MICHAEL J.....12 Pleasant Street
LANE, DANIEL W.....18 Nichols Street
LIBBY, ALBERT E.....32 Third Street
McKENZIE, JOHN R.....11 Arlington Street
MARSHALL, GEORGE W.....Parker Street
McCARRON, WILLIAM.....75 Concord Street
McDONALD, MICHAEL E.....76 High Street
McINTEE, CORMACK.....73 Fulton Street
McKAY, JOHN H.....27 Cady Street
McNABB, JAMES.....Mammoth Road
MOFFATT, WILLIAM B.....33 London Street
O'BRIEN, WILLIAM H.....332 Middlesex Street
O'CONNELL, JOHN.....71 Congress Street
O'DONNELL, PETER F.....19 Cabot Street
PAGE, ALONZO J.....286 Westford Street
PROVENCHER, NAPOLEON.....118 Central Street
QUINN, HENRY F.....106 River Street
RILEY, JAMES.....65 Pleasant Street
RYDER, CHESTER E.....58 South Whipple Street
SANBORN, THOS. J.....86 Grove Street
TILTON, HERMON N.....12 Whipple Street
WALSH, JOHN A.....11 Third Avenue
WELCH, REDMOND, JR.....8 North Street
WHITNEY, FRANK H.....59 Fremont Street
WHITTAKER, JOHN T.....23 Robinson Court

RESERVE POLICE.

STOWELL, ROBERT.....119 Lawrence Street
ROLFE, ORRIN W.....91 Christian Street
BUCHANAN, JOHN.....60 Beech Street
DOW, JAMES E.....87 Coburn Street
DUNCAN, ALEXANDER.....260 Gorham Street
FOX, FRANK.....58 Newhall Street

Fox, John W.....52 Chambers Street
Keefe, Michael J.....259 Broadway Street
Leighton, John L.....4 Horn Street
Moore, Francis E.....237½ Middlesex Street

KEEPER OF LOCK UP.

Charles Howard.

MATRON.

Margaret Wallace.....10 William Street

DRIVERS OF PATROL WAGON.

J. H. Howard. J. W. Tilton.

HOSTLER.

J. W. Kilburn.

CONSTABLES.

Harrison W. Streeter.
Henry B. Flanders.
Charles Howard.
Frank Goodwin.
George R. Davis.
James F. Dunlavy.
John B. Swift.
Isadore Turcotte.
Charles Laflamme
David Fitzgerald.
Auguste Guillet.
John P. Searle.
Joseph S. Lapierre.
George B. Palmer.
Waverley B. Tasker.
Oswald Lapierre.
D. J. Donaldson.
Jacob G. Favor.
W. R Kew.
Isaac L. Libby.
Simon B. Harris.
Michael H. McCue.

Daniel M. Hayes.	James A. McQuade.
Henry Hoole.	Peter Cawley.
Jas. E. Webster.	James B. Trueworthy.
Wm. G. Bumps.	Edward R. Donovan.
Frederick A. Bates.	Frank J. Green.

City Charter, Sect. 19; Ord., Chap. 37, Sect. 2.

POLICE COURT.

Samuel P. Hadley.....*Standing Justice*

John J. Pickman, }
John F. Frye, } .....*Special Justices*

James F. Savage.....*Clerk*

HEALTH COMMISSIONER.

Charles Howard. .....Office, Police Station

Chosen by concurrent vote by nomination commencing in the Board of Aldermen, in January or February, Ord., Chap. 37, Sect. 1.

BOARD OF HEALTH.

Chas. R. Costello, 1891-92.

James B. Field, M. D., 1890-91.

Wm. P. Lawlor, City Physician, *ex-officio*.

James B. Field, *Chairman*.

Appointed by the Mayor and Aldermen in January. Chap. 80, Pub. Stat., Sect. 8; Ord., Chap. 22, Sect. 1.

BOARD OF REGISTRARS OF VOTERS.

JOHN B. COLEMAN.....Until May 1, 1892
JOHN P. MAHONEY..... " " 1893
CHARLES H. MCINTIRE..... " " 1894

MICHAEL J. DOWD, City Clerk, *ex-officio*.
JOHN P. MAHONEY, *Chairman*.

Chap. 298, Sect. 14, Acts of 1884.

FENCE VIEWERS.

SIMON B. HARRIS. LEROY C. HALL. JOSHUA M. HADLEY.

Chosen by concurrent vote by nomination commencing in the Board of Aldermen, in January or February. Ord., Chap. 37, Sect. 1.

FIELD DRIVERS.

W. H. GRADY. W. R. KEW.
JAMES DUNLAVY. JAMES E. WEBSTER.

Chosen by concurrent vote commencing in the Board of Aldermen, in January or February. Ord., Chap. 37, Sect. 1.

POUND KEEPER.

WILLIAM SEAVER.

Chosen by concurrent vote by nomination commencing in the Board of Aldermen, in January or February. Ord., Chap. 37, Sect. 1.

SEALER OF WEIGHTS AND MEASURES.

NATHANIEL E. ANNIS.....265 Middlesex Street

Appointed by the Board of Aldermen by nomination in March or April. Pub. Stat., Chap. 65, Sect. 8, Acts 1882, Chap. 42.

INSPECTOR OF MILK AND VINEGAR.

THOMAS O. ALLEN, Office, Board of Health, 76 Merrimack Street.

Appointed by the Board of Aldermen by nomination in January or February. Ord., Chap. 37, Sect. 2.

INSPECTOR OF PETROLEUM OILS.

GEORGE B. ROOT.

Appointed by the Mayor and Aldermen. Pub. Stat., Chap. 59, Sect. 6.

INSPECTORS OF BOILERS.

RICHARD DOBBINS.....Office, Tanner Street
BARTHOLOMEW SCANNELL.....Office, 36 Tanner Street
JAMES A. READY.....

Pub. Stat., Chap. 102, Sect. 49.

INSPECTORS OF PROVISIONS.

FREDERICK A. BATES.....Office, Board of Health
GEORGE R. DAVIS.....Police Station
DANIEL W. LANE..... " "
JAMES E. WEBSTER..... " "

Appointed by the Mayor and Aldermen. Pub. Stat., Chap. 58, Sect. 1.

FISH WARDEN.

OREN C. CARLTON.....Office, 8 Third Street

Appointed by the Mayor and Aldermen. Pub. Stat., Chap. 91, Sect. 2.

MEASURER OF WOOD AND BARK—SUPERINTENDENT OF CITY SCALES—INSPECTOR OF BALE OR BUNDLE HAY.

RICHARD J. NOONAN.....Office at City Scales, rear Market House Building.

Appointed by the Board of Aldermen, in January or February. Ord., Chap. 40, Sect. 1.

MEASURERS OF WOOD AND BARK BROUGHT BY WATER OR RAILROAD CARS INTO THE CITY.

JOHN F. BATEMAN. JOSEPH HOVEY.

Appointed by the Board of Aldermen, in January or February. Ord., Chap. 37, Sect. 2.

MEASURERS OF WOOD AND BARK.

EDWIN E. AREY.....Tannery, Ayer's City
CLARENCE G. COBURN.....Pawtucket Square
ETHAN D. CUTTING.....
ABRAM COFFIN.....City Yard
WILLIAM H. HARRIGAN.....City Yard
CYRUS F. HILL.....Lowell Machine Shop
JOSEPH HOVEY.....
JAMES P. ROBERTS.....
PATRICK SEXTON.....63 Moody Street
HARRY L. STANLEY.....63 Moody Street
FRANKLIN T. WILSON.....

Appointed by the Board of Aldermen in January or February. Ord., Chap. 40, Sect. 1.

MEASURERS OF GRAIN.

WILLIS J. HILL. GEORGE W. TILTON.
FRANK H. PARKER. HENRY J. WILLIAMS.

Fees, 2½ mills per bushel for measuring. Appointed by the Board of Aldermen, in January or February. Ord., Chap 37, Sect. 2.

MEASURERS OF UPPER LEATHER.

EDWIN E. AREY. WILLARD A. BROWN.
ROBERT BOOTH. WILLIAM H. WHITE.

Appointed by the Board of Aldermen, in April. Ord., Chap. 37, Sect. 2.

SURVEYORS OF LUMBER.

EDWARD A. ALLEN. WARREN W. HERBERT.
ALFRED P. BATEMAN. EDWARD LETOUR.
ERI G. BAKER. HARRY B. PETTINGILL.
JOHN F. BATEMAN. EDWIN POTTS.
FREDERICK CONANT. ORESTES M. PRATT.

W. H. Costello.	Ephraim Simonds.
Charles L. Flanders.	Edward Stockman.
Albert I. Gilman.	John Van Tassell.
Edward S. Eastman.	A. B. Woodworth, Jr.
Cyrus F. Hill.	Leroy A. Braynard.

Chosen by concurrent vote by nomination commencing in the Board of Aldermen, in January or February. Ord., Chap. 37, Sect. 1.

SURVEYORS OF PLASTERING, BRICK OR STONE WORK AND PAINTING.

John F. Bateman.	Atis Osgood,
George Bowers.	Orin F. Osgood.
George E. Evans.	Melvin B. Smith.
Alden B. Ilsley.	Ora M. Snell.
Philip H. Ilsley.	Henry O. Brooks.

Appointed by the Board of Aldermen, in January or February. Ord. Chap. 37, Sect. 2.

WEIGHERS OF HAY AND OTHER ARTICLES.

Horace P. Beals.....City Stables
Edmund Brickett, at Scales cor. Western Ave. and Fletcher Street
Patrick H. Burns.....
Clarence G. Coburn.....Scales, Pawtucket Square
James T. Choate.....
John W. Crawford.....City Stables
Ethan D. Cutting..... " "
Michael M. Doyle.....
Leroy C. Hall.....Dutton Street
William H. Harrigan.....City Stables
Willis T. Hill.....
Cyrus F. Hill.....Lowell Machine Shop
Frank H. Parker.....
Samuel R. Pendexter.....City Stables
Patrick Sexton.....63 Moody Street
Harry L. Stanley..... " " "
John Warrurton.....

Appointed by the Board of Aldermen, in January or February. Ord., Chap. 21, Sect. 1.

WEIGHERS OF COAL.

Patrick Burns.
Lon M. Balcolm.
Edward Cawley.
James Cawley.
James T. Choate.
Dennis E. Connors.
Edward F. Connors.
Willis J. Hill.
Fred Horne.
Everett R. Howard.
John H. Howard.
Thomas J. Kennedy.
Gardner W. King.
C. B. Kitchen.
Walter T. Moore.
James P. Roberts.
Philip P. Connors
William H. Donovan.
Edward Drewett.
Leonard T. Farris, Jr.
George W. Farnham.
Henry H. Gates.
Horace F. Gove.
Charles B. Rushworth.
George G. Spofford.
Daniel F. Sullivan.
Charles E. Stevens.
John Warburton.
Augustus W. Weeks.
Herbert R. White.
Sidney W. Wiggin.
Edwin A. Wilson.

Appointed by the Board of Aldermen, in January or February. Ord., Chap. 37, Sect. 2.

JANITOR OF HUNTINGTON AND JACKSON HALLS.

James H. Cahill.

Appointed by the Mayor.

SCHOOL COMMITTEE 1891.

GEORGE W. FIFIELD ..... *Chairman.*

WALTER COBURN ..... *Vice-Chairman.*

ARTHUR K. WHITCOMB ..... *Secretary.*

GEORGE W. FIFIELD, Mayor ..... } *Ex-officiis*

THOMAS J. SPARKS, President Common Council ..... }

145 Lawrence Street.

Ward 1—LAWRENCE CUMMINGS ..... Term expires 1891

61 Adams Street.

PATRICK KEYES, JR., ... " " 1892

213 Market Street.

Ward 2—GREENLEAF C. BROCK ..... " " 1891

Cor. Bridge and First Streets.

WILLIAM H. LATHROP ..... " " 1892

15 First Street.

Ward 3—GEORGE M. HARRIGAN ..... " " 1891

Office Lowell Trust Co.

JOHN W. MCEVOY ..... " " 1892

81 Central Street.

Ward 4—FRED WOODIES ..... " " 1891

Office of L. M. Shop.

RANSOM A. GREENE ..... " " 1892

25 Walker Street.

Ward 5—WALTER COBURN ..... " " 1891

19 Congress Street.

ANDREW G. SWAPP ..... " " 1892

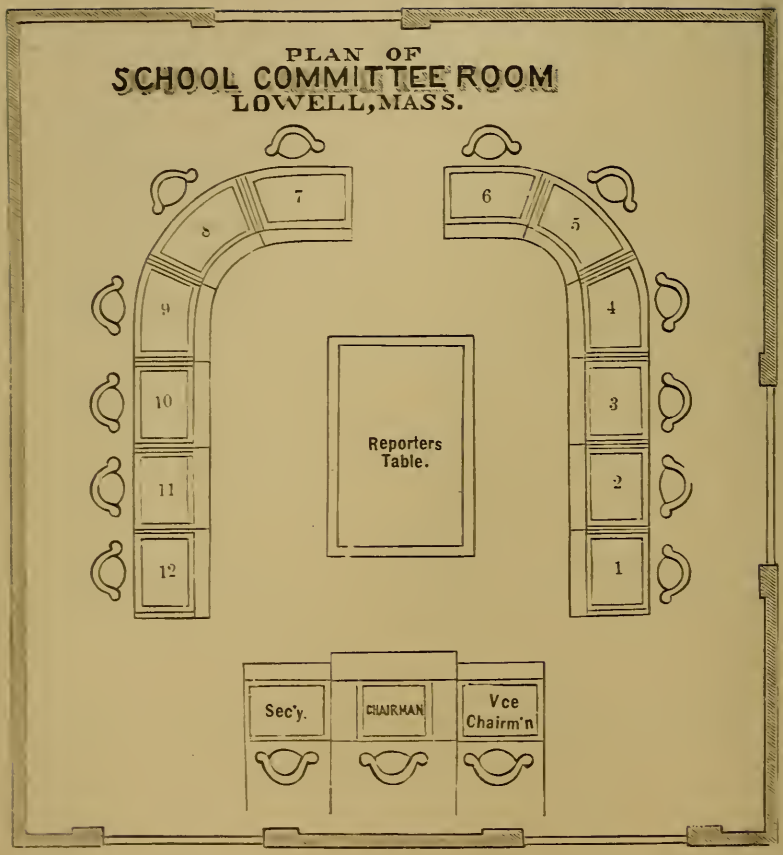
187 Pawtucket Street.

Ward 6—LEONARD HUNTRESS ..... " " 1891

38 Fort Hill Avenue.

ALMON W. HILL ..... " " 1892

20 Middlesex Street.



GEORGE W. FIFIELD, *Mayor.*
WALTER COBURN, *Vice-Chairman.*
ARTHUR K. WHITCOMB, *Secretary.*

1—Wm. H. Lathrop.
2—Lawrence Cummings.
3—George M. Harrigan.
4—Ransom A. Greene
5—Fred Woodies.
6—Andrew G. Swapp.
7—Greenleaf C. Brock.
8—Leonard Huntress.
9—Almon G. Hill.
10—John W. McEvoy.
11—Patrick Keyes, Jr.
12—Thomas J. Sparks.

STANDING COMMITTEES.

On Accounts— The Mayor, Messrs. Woodies, Harrigan, Swapp, Keyes.

On School Houses and Hygiene—Messrs. Cummings, McEvoy, Huntress, Hill, Lathrop.

On Teachers and Training School— Messrs. Brock, Greene, Coburn, Harrigan, Huntress.

On Reports and Printing— Messrs. McEvoy, Huntress, Brock, Greene, Lathrop.

On Books and Supplies—Messrs. Swapp, Woodies, Hill, McEvoy, Harrigan, Lathrop.

On Salaries—The Mayor, Messrs. Brock, Cummings, Coburn, Keyes.

On Penmanship and Drawing—Messrs. Woodies, Coburn, McEvoy, Hill, Keyes.

On Music—Messrs. Harrigan, Lathrop, Greene, Swapp, Cummings.

On Evening Schools—Messrs. Greene, Cummings, Swapp, Hill, Keyes.

On Rules and Regulations—Messrs. Coburn, Woodies, Harrigan Swapp, McEvoy.

On Military Instruction — Messrs. Hill, Coburn, Cummings, Keyes, Lathrop.

On Private Schools—The Mayor, Messrs. Brock, McEvoy, Huntress, Keyes.

REGULAR MEETINGS OF THE SCHOOL COMMITTEE.

January....26	July....27
February....23	August....31
March....30	September....28
April....27	October....26
May....25	November....30
June....29	December....28

SUPERINTENDENT OF PUBLIC SCHOOLS.

ARTHUR K. WHITCOMB.....Office in City Government Building.

OFFICE HOURS: One hour after the forenoon session of the schools; and from 2 to 3 o'clock, Saturday afternoon.

TRUANT COMMISSIONERS.

BICKFORD LANG. JOHN F. WILLIAMS.

JAMES KELLEY.

Office in City Government Building.

ASSIGNMENT OF SCHOOLS.

THE MAYOR—Reform School.

MR. SPARKS—Reform and Middlesex Village.

MR. CUMMINGS—High, Green and Morrill.

MR. KEYES—High, Reform, Cottage Street, Chapel, Worthen and Cheever Streets.

MR. BROCK—High, Varnum and Fourth Street.

DR. LATHROP—Kirk Street, West Sixth Street, Tenth Street, Lakeview Avenue.

MR. HARRIGAN—High, Butler, Agawam, Lyon Street.

MR. MCEVOY—London Street, Carter Street, Ames Street, Weed Street.

MR. WOODIES—Highland, Franklin, Howard Street, Grand Street.

MR. GREENE—High, Edson, Eliot, Dover Street, Powell Street.

MR. COBURN—High, Pawtucket, Mammoth Road, Cross Street, Plain Street, Varnum Avenue.

MR. SWAPP—High, Bartlett, Cabot Street, School Street.

DR. HUNTRESS—Colburn, High Street, Pond Street.

DR. HILL—High, Moody, Fayette Street, Charles Street, Central Street.

HIGH SCHOOL—Messrs Coburn, Cummings, Keyes, Brock, Harrigan, Greene, Swapp, Hill.

POPULATION OF THE CITY OF LOWELL.

Year.	Population.	Year.	Population.	Year.	Population.	Year.	Population.
1828	3 532	1837	18,010	1855	37,554	1875	49,688
1830	6.477	1840	20.981	1860	36,827	1880	59,485
1832	10,254	1844	25,163	1865	30,990	1885	64,107
1833	12,963	1846	29,127	1866	36,878	1890	77,696
1836	17,633	1850	33.383	1870	40,928	....	....

POPULATION, LEGAL VOTERS ETC., BY WARDS.

Wards.	Population, 1890.	Register'd Voters, Dec. 1889.	Precincts.	Regist'd Voters, Dec. 1890.			Vote for Mayor, '90	
				Males.	Females.	Total.	Fifield	Palmer.
1....	11,398	Males 1,627 Females 0	1.....	508	0			
			2	505	0.			
			3.....	528	0	1541	983	403
2....	13,189	Male 2.014 Females 28	1.....	338	5			
			2.....	695	22			
			3.....	920	1	1981	752	929
3....	14,298	Males 2,320 Females 3	1.....	673	0			
			2.....	883	0			
			3.....	785	2	2343	1298	742
4....	12,860	Males 2,184 Females 7	1.....	507	0			
			2.....	720	2			
			3.....	1013	5	2247	577	1291
5....	15,967	Males 1,894 Females 23	1.....	591	6			
			2	573	3			
			3.....	705	14	1892	802	854
6....	9,984	Males 1,976 Females 185	1.....	703	47			
			2.....	559	52			
			3.....	729	51	2141	939	839
Total.	77,696	12,261	.....	11935	210	12.145	5351	5058

CATALOGUE

OF THE

GOVERNMENT OF THE CITY OF LOWELL,

IN

CHRONOLOGICAL ORDER OF SERVICE,

From its Institution, 1836, to 1890, inclusive.

1836.

Mayor:

ELISHA BARTLETT.

Aldermen:

William Austin, resigned Oct. 10,
Joseph Tapley, elected November,
Seth Ames,
Aaron Mansur,
Benjamin Walker,
Oliver M. Whipple,
Alexander Wright.

SAMUEL A. COBURN, City Clerk.

Common Council:

John Clark, *President*,
Henry J. Baxter,
Jonathan Bowers,
George Brownell,
James Cook,
David Dana,
Erastus Douglass,
Josiah B. French,
Cyril French,
Samuel Garland,
Horatio W. Hastings,
Horace Howard,
Stephen Mansur,
John Mixer,
Thomas Nesmith,
David Nourse,
Thomas Ordway,
James Russell,
John A. Savels,
Sidney Spalding,
Weld Spalding,
Jonathan Tyler,
Tappan Wentworth,
William Wyman.

GEO. WOODWARD, Clerk, died. ALBERT LOCKE, elected.

1837.

Mayor:

ELISHA BARTLETT, † '36.

Aldermen:

Seth Ames, * '36,
John Aiken,
Seth Chellis,
Joseph G. Kittredge,
Joshua Swan,
Alexander Wright, * '36.

SAMUEL A. COBURN, City Clerk.

Common Council:

Ward 1.

Joshua Abbott,
James K. Fellows,
Jesse Phelps,
Walter Wright

Ward 2.

William Fiske,
Thomas Nesmith, '36,
Josiah Osgood,
Joseph Tyler.

Ward 3.

Joseph M. Dodge,
Elisha Huntington, *President*,
William North,
Joseph Tapley.

Ward 4.

William Baker,
Elijah M. Read,
Charles H. Wilder,
William W. Wyman.

Ward 5.

George Brownell, '36,
Osgood Dane,
James Russell, '36,
Tappan Wentworth, '36,

Ward 6.

Andrew Bird,
Benjamin H. Gage,
Jona. T. P. Hunt,
Abram Tilton.

ALBERT LOCKE, Clerk.

The figures without other marks indicate membership of the Common Council those years.
† Mayor that year. * Alderman that year. ‡ President of Common Council that year.

1838.

Mayor:

LUTHER LAWRENCE.

Aldermen:

Benjamin F. French,
Charles L. Tilden,
Oliver M. Whipple, * '36,
George H. Carleton,
George Brownell, '36, '37,
Seth Chellis, * '37.

THOMAS ORDWAY, CITY CLERK.

Common Council:

WARD 1.

Jesse Phelps, '37,
Walter Wright, 37,
Eliphalet Brown,
Perez Fuller.

WARD 2.

William Fiske, '37,
Aaron H. Sherman,
William Upham,
Henry J. Baxter, '36.

WARD 3.

Thomas Hopkinson,
Elisha Huntington, ‡ '37, *President*,
Horace Howard, '36,
John Mixer, '36.

WARD 4

David Dana, '36,
Perley Hale,
Benjamin Walker, * '36,
William Baker, '37.

WARD 5.

Garret J. Bradt,
Benjamin Wilde,
Erastus Douglass, '36,
Rufus Paul.

WARD 6.

Eli Cooper,
Thomas L. Randlett,
James L. Foot,
Calvin Goodspeed.

ALBERT LOCKE, CLERK.

1839.

Mayor:

LUTHER LAWRENCE,—[DIED IN APRIL.]
ELISHA HUNTINGTON, ‡'37, ‡'38.

Aldermen:

Benjamin F. French, * '38,
John O. Green,
Charles L. Tilden, * '38,
George H. Carleton, * '38,
John Clark, ‡ '36,
Oliver M. Whipple, * '36, * '38.

THOMAS ORDWAY, CITY CLERK.

Common Council:

WARD 1.

Walter Wright, '37, '38,
Harlin Pillsbury,
Eliphalet Brown, '38,
Forrest Eaton.

WARD 2.

Jonathan Tyler, '36,
John Nesmith,
Henry J. Baxter, '36, '38,
Jefferson Bancroft.

WARD 3.

Thomas Hopkinson, '38, *President.*
Jacob Robbins,
John G. Locke.

WARD 4.

Benjamin Walker, * '36, '38.
Samuel Horn,
Stephen Carleton,
Stephen Mansur, '36.

WARD 5.

Tappan Wentworth, '36, '37,
Lewis McIntire, died Feb., '40,
Benjamin Wilde, '38,
Garret J. Bradt, '38.

WARD 6.

Thomas L. Randlett, '38,
Joseph S. Holt,
John L. Fitts,
Daniel Knapp.

ALBERT LOCKE, CLERK.

1840.

Mayor.

ELISHA HUNTINGTON, ‡'37, ‡'38, †'39.

Aldermen:

Jonathan Tyler, '36, '39.
John R. Adams,
Joseph Bedlow,
Harlin Pillsbury, '39,
Seth Ames, * '36, * '37,
Stephen Mansur, '36, '39.

THOMAS ORDWAY, City Clerk.

Common Council.

Ward One.

Forrest Eaton, '39,
Sylvanus Adams,
Henry Patch,
R. M. Hutchinson.

Ward 2.

Jefferson Bancroft, '39,
John Nesmith, '39,
Joseph G. Kittredge, * '37,
Josiah Osgood, '37.

Ward 3.

Pelham W. Warren, *President*,
Abner W. Buttrick,
Asa Hall,
Samuel Burbank.

Ward 4.

Ferdinand Rodliff,
Ethan Burnap,
Edward F. Watson,
B. Walker, * '36 '38 '39, died Sept

Ward 5.

Tappan Wentworth, '36, '37, '39,
Samuel W. Brown,
John J. Crane,
George Dane.

Ward 6.

Daniel Knapp, '39,
George L. Fitts, '39,
Joseph Battles,
Joshua Converse.

ALBERT LOCKE, Clerk, died October. JOHN G. LOCKE, elected October

1841.

Mayor:

ELISHA HUNTINGTON, ‡'37, ‡'38, †'39, †'40.

Aldermen:

Seth Chellis, * '37, '38,
Jefferson Bancroft, '39, '40,
Cyril French, '36,
George H. Carleton, * '38, * '39,
John R. Adams, * '40,
John Aiken, * '37.

THOMAS ORDWAY, City Clerk.

Common Council:

Ward 1.

Henry Patch, '40,
George Bragdon,
John W. Holland,
Arnold Welch,

Ward 2.

William Fiske, '37, '38,
Erasmus D. Leavitt,
Jonathan White,
Nathaniel Wilson.

Ward 3.

Samuel Burbank, '40,
Nathaniel Critchett,
Royal Southwick,
Edward Winslow.

Ward 4.

Ethan Burnap, '40,
William Livingston,
John Morrison,
Edward F. Watson, '40,

Ward 5.

Tappan Wentworth, '36, '37, '39, '40, *President*,
Samuel W. Brown, 40,
John J. Crane, '40,
Phineas Whiting.

Ward 6.

Francis H. Bowers,
Isaac H. Cooper,
William Potter,
John Smith.

JOHN G. LOCKE, Clerk.

1842.

Mayor:

NATHANIEL WRIGHT.

Aldermen:

Nathaniel Thurston,
Jefferson Bancroft, '39, '40, '41,
Cyril French, '36, * '41,
William Livingston, '41,
Ithamar A. Beard,
John W. Graves.

THOMAS ORDWAY, City Clerk.

Common Council;

Ward 1.

Jeremiah P. Jewett,
John Hadley,
James Townsend,
Edward J. Payne.

Ward 2.

John Nesmith, '39, '40,
Erasmus D. Leavitt, '41,
Joseph W. Mansur, *President*,
James Hopkins.

Ward 3.

Nathaniel Critchett, 41,
Ira Spalding,
John Mead,
Asa W. Willoughby.

Ward 4.

John Morrison, '41,
William Carlton,
Oliver March,
Josiah B. French, '36.

Ward 5.

James Patterson,
Isaac Appleton,
Josiah Seavey,
Roswell Douglass.

Ward 6.

James Russell, '36, '37,
Jonathan Kendall,
Varnum A. Shedd,
Isaac N. Fitts.

JOHN G. LOCKE, Clerk.

1843.

Mayor:

NATHANIEL WRIGHT, † '42.

Aldermen;

Harlin Pillsbury, '39, * '40, res'd June,
Henry C. Johnson,
Cyril French, '36, * '41, * '42,
S. Spalding, '36, resigned in June
Joseph Griffin,
Charles L. Tilden, * '38, '39.

THOMAS ORDWAY, City Clerk.

Common Council:

Ward 1.

Daniel Bixby,
Edward J. Payne, '42,
Hugh Cummiskey,
Walter Wright, '37, '38, '39.

Ward 2.

Henry J. Baxter, '36, '38, '39,
John P. Simonds,
Pliny Lawton,
Ben Osgood.

Ward 3.

John Mead, '42,
Willard Brown,
Ira Spalding, '42,
Benjamin J. Gerrish.

Ward 4.

Otis Allen,
Alfred Gilman,
Oliver March, '42, *President*,
William Carlton, '42.

Ward 5.

James Patterson, '42,
David Bradt,
John L. Tripp,
Benjamin F. Holden.

Ward 6.

John B. McAlvin,
Cyrus Battles,
Sewall G. Mack,
Charles F. Mitchell.

JOHN G LOCKE, Clerk.

1844.

Mayor:

ELISHA HUNTINGTON, ‡'37, ‡'38, †'39, †'40, †'41.

Aldermen:

Henry Smith,
Selwin Bancroft,
O. M. Whipple, *'36, *'38, *'39.
Edward F. Watson, '40, '41,
Joseph Griffin, *'43,
John Wright.

THOMAS ORDWAY, City Clerk.

Common Council:

Ward 1.

Forrest Eaton, '39, '40,
Gilman N. Nichols,
Hugh Cummiskey, '43,
David Healey.

Ward 2.

John P. Simonds, '43,
Ben Osgood, '43,
Amos Merriam,
John Clark, ‡ 36, *'39, *President.*

Ward 3.

Charles B. Coburn,
George Choate,
Isaac Scripture,
William C. Gray.

Ward 4.

Asa Wetherbee,
Abner W. Buttrick, '40,
Horatio G. F. Corliss,
Charles H. Wilder, '37.

Ward 5.

John L. Tripp, '43,
David Bradt, '43,
John Wright,
Nathaniel Wright, Jr.

Ward 6.

Sewall G. Mack, '43,
James Russell, '36, '37, '42,
Jonathan Kendall, '42,
Gilman Gale.

JOHN G. LOCKE, Clerk.

1845.

Mayor.

ELISHA HUNTINGTON, ‡'37, ‡'38, †'39. †'40, †'41, †'44.

Aldermen:

Henry Smith, *'44,
Selwin Bancroft, *'44,
O. M. Whipple, *'36, *'38, *'39, *'44,
Edward F. Watson, '40, '41, *'44,
John C. Dalton,
Daniel Knapp, '39.

THOMAS ORDWAY, City Clerk,

Common Council.

Ward 1.

Gilman N. Nichols, '39.
Danforth P. Brigham,
Jonathan Adams,
Willard C. Welch.

Ward 2.

John P. Simonds, '43, '44,
Daniel Balch,
William Brown,
Daniel S. Richardson, *President.*

Ward 3.

Isaac Scripture, '44,
William C. Gray, '44,
George Choate, '44,
Hapgood Wright.

Ward 4.

Abner W. Buttrick, '40, '44,
Asa Wetherbee, '44,
Charles H. Wilder, '37, '44,
Josiah Sawtell.

Ward 5.

Nathaniel Wright, Jr., '44,
Amos Hyde,
Edward Sherman,
James Fenno.

Ward 6.

Gilman Gale, '44,
John B. McAlvin, '43,
Samuel Fay, Jr.,
Lorenzo P. Wright.

JOHN G. LOCKE, Clerk.

1846.

Mayor:

JEFFERSON BANCROFT, '39, '40, * '41, * '42.

Aldermen:

Henry Smith, * '44, * '45,
Selwin Bancroft, 44, * '45,
William C. Gray, '44, '45,
Joseph Butterfield,
John C. Dalton, '45,
D. Knapp, '39, * '45, resigned July,
Isaac Cooper, '41, elected August.

THOMAS ORDWAY, City Clerk.

Common Council:

Ward 1.

Gilman N. Nichols, '39, '45,
Danforth P. Brigham, '45,
Willard C. Welch, '45,
Thomas S. Hutchinson.

Ward 2.

Daniel Balch, '45,
William Brown, '45,
Daniel S. Richardson, ‡ '45, *President*,
Zadock Rogers.

Ward 3.

Hapgood Wright, '45,
Isaac Farrington,
Joel Powers,
Franklin Mead.

Ward 4.

Josiah Sawtell, '45,
Solon Stevens,
David J. Moody,
William Fletcher.

Ward 5.

Amos Hyde, '45,
Horatio G. F. Corliss, '44,
Jonathan Bowers, '36,
Charles M. Short.

Ward 6.

Lorenzo P. Wright, '45,
John L. Fitts, '39, '40,
Lewis Packard,
Columbus J. Hubbard.

JOHN G. LOCKE, Clerk.

1847.

Mayor:

JEFFERSON BANCROFT, '39, '40, * '41, * '42, † '46.

Aldermen:

George Bragdon,
Joseph Butterfield, * '46,
Linus Child,
James Fenno, '45,
Elisha Huntington, ‡ '37, ‡ '38 † '39, † '40, † '41, † '44, † '45,
Sewall G. Mack, '43, '44,
Stephen Mansur, '36, '39, * '40,
Josiah Sawtell, '45, '46.

THOMAS ORDWAY, City Clerk.

Common Council:

Ward 1.

William Conihe,
James C. Crombie,
David S. Bachelder,
Jesse Huse.

Ward 2.

Samuel W. Brown, '40, '41,
Hannibal Powers.
William Newman,
Otis L. Allen.

Ward 3.

Joel Powers, '46,
Franklin Mead, '46,
Isaac Farrington, '46,
Samuel G. Davis.

Ward 4

Joel Adams, *President*,
Horatio Fletcher,
Solon Stevens, '46,
Stephen A. Coburn.

Ward 5.

Ignatius Tyler,
Edward C. Johnson,
Elihu Gates,
Charles M. Short, '46.

Ward 6.

Thomas Wentworth,
Isaac N. Parker,
John R. Southwick,
Isaiah Morse.

JOHN G LOCKE, Clerk.

1848.

Mayor:

JEFFERSON BANCROFT, '39, '40, *'41, *'42, † '46, †47

Aldermen:

David Dana, '36, '38,
Erastus Douglass, '36, '38,
Jacob Graves, resigned in June,
William Newman, '47,
Gilman N. Nichols, '39, '45, '46,
Daniel S. Richardson, ‡ '45, ‡ '46,
Josiah Sawtell, '45, '46, * '47,
O. M. Whipple, *'36, *'38, *'39, *'45

THOMAS ORDWAY, City Clerk.

Common Council:

Ward 1.

William Conihe, '47,
James C. Crombie, '47,
Jesse Huse, '47,
Gerry Wilson.

Ward 2.

Otis L. Allen, '47,
William H. Flagg,
John Nesmith, '39, '40, '42,
Hannibal Powers, '47.

Ward 3.

Alfred Gilman, '43,
Thomas Hopkinson, '38, '39, *President*,
Ransom Reed,
Nathaniel Critchett, '41, '42.

Ward 4.

John Avery,
Otis Allen, '43,
Abiel Rolfe,
Horace Howard, '36, '38.

Ward 5.

Ignatius Tyler, '47,
Elihu Gates, '47,
Edward C. Johnson, '47,
Charles M. Short, '46, '47.

Ward 6.

Thomas Wentworth, '47,
Isaac N. Parker, '47,
Jeremiah M. Currier,
Horace Parmenter.

JOHN G. LOCKE, Clerk.

1849.

Mayor:

JOSIAH B. FRENCH, '36, '42.

Aldermen:

James B. Francis,
Cyril French, '36, * '41, * '42, * '43,
James H. B. Ayer,
Daniel D. Crombie,
Daniel Carter,
George Brownell, '36, '37, * '38,
ArtemasL. Brooks,
Joseph Bedlow, * '40.

THOMAS ORDWAY, City Clerk.

Common Council:

Ward 1.

Jesse Huse, '47, '48, resigned Feb.,
William A. Richardson, elected March,
Gerry Wilson, '48,
John W. Smith,
Alfred S. Saunders.

Ward 2.

William H. Flagg, '48,
Ivers Taylor,
Isaac S. Morse, resigned,
Ambrose Lawrence.

Ward 3.

Alfred Gilman, '43, '48,
Elisha Davis,
James Dinsmoor.
Andrew C. Wheelock.

Ward 4.

Nathaniel B. Favor,
Galeb Crosby,
Ezekiel Wright,
Waldo A. Fisher.

Ward 5.

Maynard Bragg,
Joshua Decatur,
Abram T. Melvin,
W. W. Morse.

Ward 6.

William Lamson, Jr.,
Jeremiah M. Currier, '48,
George S. Wright,
John Aiken, * '37, * '41, *President.*

GEORGE A. BUTTERFIELD, Clerk.

1850.

Mayor:

JOSIAH B. FRENCH, '36, '42, † '49.

Aldermen:

James H. B. Ayer, * '49,
Joseph Bedlow, * '40, * '49,
Daniel D. Crombie, * '49,
James B. Francis, * '49,
Philip Hardy,
John Mixer, '36, '38,
Josiah G. Peabody,
James Townsend, '42.

THOMAS ORDWAY, City Clerk.

Common Council:

Ward 1.

John W. Smith, '49,
Daniel R. Kimball,
James Watson,
Jonathan Smothers.

Ward 2.

Ivers Taylor, '49, *President.*
George Gardner,
Samuel Lawrence, 2d,
Samuel J. Varney.

Ward 3.

Jonathan Page,
John Tripp,
Fordyce Coburn,
Joshua Merrill.

Ward 4.

Abner W. Buttrick, '40, '44, '45,
Caleb Crosby, '49,
Benjamin Goddard,
Nathaniel B. Favor, '49.

Ward 5.

George P. Elliot,
William Fiske, '37, '38, '41,
George W. Worthen,
Maynard Bragg, '49.

Ward 6.

Albert Mallard,
Stephen P. Sargent,
George S. Wright, '49,
Wm. Lamson, Jr., '49, res'd May.

GEO. A. BUTTERFIELD, Clerk, res'd May. WM. LAMSON, Jr, elc'td May

1851.

Mayor:

JAMES H. B. AYER, * '49, * '50.

Aldermen:

William Fiske, '37, '38, '41, '50,
Ambrose Lawrence, '49,
James Townsend, '42, * '50,
Philip Hardy, * '50,
William North, '37,
Abiel Rolfe, '48,
Lucius A. Cutler,
Joshua Converse, '40.

THOMAS ORDWAY, City Clerk.

Common Council:

Ward 1.

James Watson, '50,
Jonathan Smothers, '50,
Charles B. Coburn, '44,
Stephen Moar.

Ward 2.

Linus Child, * '47,
George Gardner, '50, *President,*
Samuel J. Varney, '50,
Zachariah B. Caverly.

Ward 3.

Fordyce Coburn, '50,
William Twichell,
Darius C. Brown,
Benjamin C. Sargent.

Ward 4.

Benjamin Goddard, '50,
Richard Dennis,
Holland Streeter,
Solomon D. Emerson.

Ward 5.

George P. Elliot, '50,
Edward Fifield,
John N. Ford,
Theodore H. Sweetser.

Ward 6.

George W. Worthen, '50.
George W. Jones, died Sept.,
Stephen P. Sargent, '50,
Albert Mallard, '50.

WILLIAM LAMSON, Jr., Clerk.

1852.

Mayor:

ELISHA HUNTINGTON, ‡'37, ‡'38, †'39, '†40, '†4(, †'44, †45, *'47

Aldermen:

Joseph Bedlow, *'40, *'49, *'50,
Joseph M. Bullens,
Samuel Burbank, '40, '41,
Joseph B. V. Coburn,
Wm. Fiske, '37, '38, '41, '5(, *'51,
William North, '37, *'51,
Alpha Stevens,
Samuel J. Varney, '50, '51.

THOMAS ORDWAY, CITY CLERK.

Common Council:

WARD 1.

Rufus Rogers,
John C. Smith,
Jeremiah Clark,
Paul Hill.

WARD 2.

Paul Perkins,
Milton Bonney,
William Hovey,
Zachariah B. Caverly, '51.

WARD 3.

Darius C. Brown, '51,
William Twichell, '51,
Benjamin C. Sargeant, '51, *President*,
Michael B. Caswell.

WARD 4.

Holland Streeter, '51,
Elbridge Livingston,
Abram French,
Willard Minot.

WARD 5.

Edward Fifield, '51,
Phineas Whiting, '41,
George W. Patterson,
Jonathan Kendall, '42, '44.

WARD 6.

Leonard W. Jaquith,
Seth Pooler,
Caleb G. Weaver,
William C. Parker.

WILLIAM LAMSON, JR., CLERK.

1853.

Mayor:

SEWALL G. MACK, '43, '44, *'47.

Aldermen:

Elisha Huntington, ‡'37, ‡'38, †'39, †'40, †'41, †'44, †'45, *'47, †'52,
Samuel K. Hutchinson,
Stephen Mansur, '36, '39, *'40, *'47,
Joseph B. V. Coburn, *'52,
Ira Spalding, '42, '43,
Joseph M. Bullens, *'52,
Alpha Stevens, *'52,
Joseph White.

THOMAS ORDWAY, CITY CLERK.

Common Council:

WARD 1.

Rufus Rogers, '52,
John C. Smith, '52,
Marcus A. Thomas,
James Cook, '36.

WARD 2.

Paul Perkins, '52,
Milton Bonney, '52,
George G. Bumpus,
George W. Stanley.

WARD 3.

Michael B. Caswell, '52,
Calvin Philbrick,
Leonard Brown,
Henry H. Wilder.

WARD 4

Abram French, '52,
Henry C. Howe,
Joseph S. Grush,
Samuel K. Pickering.

WARD 5.

George W. Patterson, '52,
Wm. A. Richardson, '49, *President*.
Patrick Conlan,
Jonathan Bowers.

WARD 6.

Caleb G. Weaver, '52,
William C. Parker, '52.
George F. Woods,
C. F. Blanchard.

WILLIAM LAMSOM, JR. CLERK.

1854.

Mayor:

SEWALL G. MACK, '43, '44, * '47, † '53.

Aldermen:

Elisha Huntington. ‡' 37, ‡38, †'39, †'40, † '41, † '44, † '45, * '47, † '52, * '53,
J. B. V. Coburn, * '52, * '53, res'd Jan.,
Samuel K. Hutchinson, * '53,
Ira Spalding, '42, '43, * '53,
Joseph White, * '53,
Horatio Fletcher, '47,
C. F. Blahchard, '53,
Charles Sperry.

WILLIAM LAMSOM, JR. CITY CLERK.

Common Council.

WARD 1.

John C. Smith, '52, '53,
Paul Hill, '52,
Marcus A. Thomas, '53,
Thomas Lennon.

WARD 2.

George W. Stanley, '53,
William H. Gage,
Amos A. Taylor,
William H. Bradley.

WARD 3.

Calvin Philbrick. '53,
Leonard Brown, '53, declined,
Darius C. Brown, '51, '52, elected,
Henry H. Wilder, '53,
Peter O. C. Frawley.

WARD 4.

Henry C. Howe, '53,
Joseph S. Grush, '53,
Samuel K. Pickering, '53,
Hubbard Wilson.

WARD 5.

William A. Richardson, '49, † '53. *President,*
Jonathan Bowers, '53,
Patrick Conlan, '53,
John C. Woodward.

WARD 6.

George F. Woods, '53,
Charles S. Eastman,
Levi H. Straw,
William P. Webster.

LEONARD BROWN, CLERK.

1855.

Mayor.

AMBROSE LAWRENCE, '49, '51.

Aldermen:

Wm. Fiske, '37, '38, '41, '50, * '51, * '52.
Artemas L. Brooks, * '49,
Daniel Woodward,
Lorenzo G. Howe,
Andrew T. Nute,
Abner Frost,
William S. Johnston,
Shadrach R. Brackett.

WILLIAM LAMSON, JR., CITY CLERK.

Common Council:

WARD 1.

Maynard Bragg, '49, '50,
Aaron B. Young,
Augustus B. Roby,
George L. Harris.

WARD 2.

William G. Morse,
George K. Paul,
Mark H. Cook,
Joseph A. Patten.

WARD 3.

Alfred Gilman, '43, '48. '49, *President,*
Daniel Hurd,
Theodore Warren,
Stephen K. Fielding.

WARD 4.

Joshua W. Daniels,
John Bennett,
Alanson Folsom,
Francis H. Nourse.

WARD 5.

John C. Woodward, '54,
Stephen Bartlett,
Jonathan Johnson,
Oliver P. Rand.

WARD 6.

Livi H. Straw, '54,
William T. Whitten,
Lucien P. Stacy,
James M. Moore.

LEONARD BROWN, CLERK.

1856.

Mayor:

ELISHA HUNTINGTON, ‡'37, ‡'38, †'39, †'40, †'41, †'44, †'45, *,47, †'52, *'53, *'54.

Aldermen:

Edward Tuck,
Samuel Burbank, '40, '41, * 52,
Charles B. Coburn, '44,
William P. Webster, '54,
Hapgood Wright, '45, '46,
Charles, H. Wilder, '37, '44, '45,
O. J. Conant, resigned in March,
James H. Rand,
Jonathan Johnson, elected in June,

WILLIAM LAMSON, Jr., City Clerk.

Common Council:

Ward 1.

Enos O. Kingsley,
Abiel Pevey,
David M. Collins,
Marshall E. Thompson.

Ward 2.

Isaac Hinckley,
Seth Gage,
Peter Flanders, Jr.,
Leonard F. Jewell.

Ward 3.

David Rogers,
Benj. C. Sargeant, '51, ‡'52, *President*,
Henry H. Carroll,
Peter Powers.

Ward 4.

Francis N. Nourse, '55,
Alden B. Buttrick,
Holland Streeter, '51, '52,
James Sands.

Ward 5.

Frederick Holton,
Isaac Place,
Albert Wheeler,
Abiel Rolfe, '48, *'51.

Ward 6.

Eliphalet Hills,
Jonathan P. Folsom,
James K. Fellows, '37,
John K. Chase.

JAMES J. MAGUIRE, Clerk.

1857.

Mayor:

STEPHEN MANSUR, 36, 39, * 40, * 47, * 53.

Aldermen:

Andrew T. Nute, * '55,
John C. Woodward, '54, '55,
Jonathan Smothers, '50, '51,
Samuel W. Stickney,
John B. Tuttle,
Francis H. Nourse, '55, '56,
Jonathan Johnson, '55, * 56,
John Nesmith, '39, '40, '42, '48.

WILLIAM LAMSON, Jr., City Clerk.

Common Council:

Ward 1.

Abiel Pevey,
Stephen T. Stanley,
Charles A. Welch,
George F. Scribner.

Ward 2.

William G. Morse, '55,
William D. Vinall,
Temple Tebbetts,
James M. Howe.

Ward 3.

Benjamin C. Sargeant, '51, ‡'52, ‡'56,
David Rogers, '56,
Henry H. Carroll, '56,
Nathan Allen

Ward 4.

Caleb Crosby, '49, '50,
John F. Howe,
John C. Jepson,
Alanson Nichols.

Ward 5.

Frederick Holton, '56, *President*,
William H. Wiggin,
William Goodale,
Charles Hubbard.

Ward 6.

Erastus Boyden,
Jonathan Kimball,
Robert J. Garrett,
William Nichols.

HENRY A. LORD, Clerk.

1858.

Mayor:

ELISHA HUNTINGTON, ‡'37, ‡'38, †'39, †'40, †'41, †'44, †'45, *'47, *'52, *'53, *'54, †'56.

Aldermen:

Sewall G. Mack, '43, '44, *'47, †'53, †'54,
Samuel W. Stickney, *'57,
Abiel Pevey, '56, '57,
Jeremiah P. Jewett, '42,
Joseph M. Dodge, '37,
Harvey Silver,
Albert Wheeler, 56,
Edwin A. Alger.

JOHN H. McALVIN, City Clerk.

Common Council:

Ward 1.

Charles Wilkins,
John M. Maynard,
John E. Webb,
William Barnard.

Ward 2.

Edward Tuck, *'56,
William P. Webster, '54, *'56,
Andrew Blood,
William F. Salmon.

Ward 3.

Benjamin C. Sargeant, '51, ‡'52, ‡'56, '57, *President*,
Hanover Dickey,
Joseph A. Brabrook,
Benjamin S. Butterworth.

Ward 4.

Enoch P. Young,
Zephaniah Goward,
Jesse Blake,
John F. Howe, '57.

Ward 5.

Willard Dudley,
Samuel T. Manahan,
Isaac Page,
John Avery, 2d.

Ward 6.

William Nichols, '57,
Alpha B. Farr, resigned in Jan.,
Leonard Brown, '53, '54, elec'd Feb.
Erastus Boyden, '57,
James H. Rand, *'56, resign'd May,
Eben'r Burgess, elected, in June.

GEORGE GARDNER, Clerk.

1859.

Mayor:

JAMES COOK, '36 '53.

Aldermen:

Lorenzo G. Howe, *'55,
Samuel J. Varney, '50, '51, *'52,
Paul Hill, '52, '54,
Ambrose Lawrence, '49, '51, †'55, resigned in April,
Darius C. Brown, '51, '52,
John F. Howe, '57, '58,
Joshua Converse, '40, *'51, re'd Apr.
J. P. Folsom, '56, resign'd in April,
Edward Tuck, *'56, '58, elect'd May,
Sam'l T. Manahan, 58, elec'd May,
Jonathan Ladd, elected in May.

JOHN H. McALVIN, City Clerk.

Common Council:

Ward 1.

John E. Webb, '58,
Charles Wilkins, '58,
William Barnard, '58,
William D. Blanchard.

Ward 2.

W. P. Webster, '54, *'56, '58, *President*,
William F. Salmon, '58,
James M. Howe, '57,
David Nichols.

Ward 3.

George Hobson,
Asahel D. Puffer,
John Willoughby,
Benjamin S. Butterworth, '58.

Ward 4.

Caleb Crosby, '49, '50, '57,
Jesse Blake, '58,
George W. Partridge,
George W. Young.

Ward 5.

Horatio G. F. Corliss, '44, '46,
Luther B. Morse,
Josiah G. Peabody, *'50,
William Goodale, '57.

Ward 6.

Charles A. Stott,
Levi Sprague,
Ebenezer Burgess, '58,
Leonard Brown, '53, '54, '58.

GEORGE GARDNER, Clerk.

1860.

Mayor:

BENJAMIN C. SARGEANT, 51, ‡ '52, ‡ '56, '57, ‡ '58.

Aldermen:

Edward F. Watson, '40, '41, * '44, * '45.
Lorenzo G. Howe, * '55, * '59,
James Watson, '50, '51,
William G. Morse, '55, '57,
Henry H. Wilder, '53, '54,
Abner Frost, * '55,
Samuel T. Manahan, '58, * '59,
William S. Gardner.

JOHN H. McALVIN, City Clerk.

Common Council:

Ward 1.

Benjamin S. Ireson,
Enoch Quimby,
John P. Slocum,
Amos H. Foster.

Ward 2.

Henry P. Clough,
Alfred S. Saunders, '49,
Wm. F. Salmon, '58, '59, *President*,
Joseph L. Sargent.

Ward 3.

George Hobson, '59,
Josiah B. Fielding,
Henry P. Perkins,
Hocum Hosford.

Ward 4.

George W. Partridge, '59,
George W. Young, '59,
Morrill M. Bohonan,
Caleb Crosby, '49, '50, '57, '59.

Ward 5.

Josiah G. Peabody, * '50, '59,
Sullivan L. Ward,
George F. Morey,
William H. Lamson.

Ward 6.

William Nichols, '57, '58.
Samuel T. Lancaster,
Charles A. Stott, '59,
Foster Nowell.

GEORGE GARDNER, Clerk.

1861.

Mayor:

BENJAMIN C. SARGEANT, '51, ‡ '52, '‡ 56, '57, ‡ '58, † '60.

Aldermen:

Samuel T. Manahan, '58, * '59, * '60,
Jonathan P. Folsom, '56, * '59,
James Watson, '50, '51, * '60,
William G. Morse, '55, '57, * '60,
Hocum Hosford, '60,
Aldis L. Waite,
David Whitney, declined acceptance,
Sager Ashworth, elected in May,
William S. Gardner, * '60.

JOHN H. McALVIN, City Clerk.

Common Council:

Ward 1.

Frank E. Jewett,
M. Gilbert Perkins,
Jacob Baron,
William D. Blanchard, '59,

Ward 2.

Alfred S. Saunders, '49, '60,
Joseph L. Sargent, '60,
Henry P. Clough, '60,
Henry S. Orange.

Ward 3.

William L. North, *President*,
George W. Norris,
Henry P. Perkins, '60,
James G. Morrison.

Ward 4.

Joseph Cater,
Joseph B. Keyes,
Morrill M. Bohonan, '60
Abel M. Ayer.

Ward 5.

Sullivan L. Ward, '60,
Samuel Beck,
William H. Parker,
George F. Morey, '60.

Ward 6.

Samuel T. Lancaster, '60.
Foster Nowell, '60.
Elon A. Sanborn,
George E. Dana.

GEORGE GARDNER, Clerk.

1862.

Mayor:

HOCUM HOSFORD, '60, *'61.

Aldermen:

Mertoun C. Bryant,
Edwin A. Alger, *'58,
James B. Francis, *'49, *'50,
William A. Burke,
Isaac F. Scripture
Aldis L. Waite, *'61,
Albert Wheeler, '56, *'58,
Jona. P. Folsom, '56, *'59, *'61.

JOHN H. McALVIN, City Clerk.

Common Council.

Ward 1.

Amos D. Wright,
Frank E. Jewett, '61,
Horatio G. Burgess,
Charles F. Hard.

Ward 2.

Benedict O. Carpenter,
William T. McNeill,
Lorenzo G. Howe, *'55, *'58, *'60,
Henry S. Orange, '61.

Ward 3.

George W. Norris, '61,
Edmund D. Fletcher,
Everett W. French,
John Quinn.

Ward 4.

Joseph B. Keyes, '61,
George Runels,
John Pettingell,
Hubbard Wilson, '54.

Ward 5.

Rollin C. Downs,
Albert Mallard, '50, '51,
Edward Fifield, '51, '52,
Cleveland J. Cheney.

Ward 6.

Geo. F. Richardson, *President*,
Albion J. Dudley,
Elon A. Sanborn, '61,
Frederick Frye.

GEORGE GARDNER, Clerk.

1863.

Mayor.

HOCUM HOSFORD, '60, *'61, †'62.

Aldermen:

James B. Francis, *'49, *'50, *'62,
Edwin A. Alger, *'58, *'62,
Abiel Pevey, '56, '57, *'58,
William A. Burke, *'62,
Isaac F. Scripture, *'62,
Otis Allen, '43, '48,
Albert Wheeler, '56, *'58, *'62,
William Nichols, '57, '58, '60.

JOHN H. McALVIN, City Clerk.

Common Council:

Ward 1.

Charles F. Hard, '62,
Amos D. Wright, '62,
John Cosgrove,
William A. Wright.

Ward 2.

George F. Sawtell,
Henry S. Orange, '61, '62,
Hugh McEvoy,
Nathaniel Stearns.

Ward 3.

Everett W. French, '62,
Fordyce Coburn, '50, '51,
Edmund D. Fletcher, '62,
John Quinn, '62.

Ward 4.

Atwell F. Wright,
Josiah Gates,
William Stafford,
John McCann.

Ward 5.

James C. Ayer,
Charles W. Saunders,
Cyrus H. Latham,
John E. Downs.

Ward 6.

Geo. F. Richardson, †'62, *President*,
Albion J. Dudley, '62,
Benedict O. Carpenter, '62,
Frederick Frye, '62.

GEORGE GARDNER, Clerk.

1864.

MAYOR:

HOCUM HOSFORD, '60, *'61, †'62, †'63.

ALDERMEN,

William S. Southworth,
James B. Francis, *'49, *'50, *'62, *'63,
Dana B. Gove,
William T. McNeill, '62,
George W. Norris, '61, '62,
George Runels, *'62,
Cyrus H. Latham, '63,
George F. Richardson, ‡'62, ‡63.

Common Council:

WARD 1.

Alden B. Watson,
Lewis L. Perrin,
Frederick S. Tukey,
John Cosgrove, '63.

WARD 2.

George Ripley, *President*,
Andrew F. Jewett,
Artemas S. Young,
Hoyt W. Hilton.

WARD 3.

Samuel N. Wood,
Charles W. Dodge,
Joseph S. Pollard,
James G. Morrison, '61,

WARD 4.

Atwell F. Wright, '63,
Daniel Churchill,
William W. Sherman.
Francis Jewett.

WARD 5.

John E. Downs, '63,
Thos. G. Gerrish, res'd June 14,
Charles Hubbard, '57,
Cleveland J. Cheney, '62.

WARD 6.

Levi Sprague, '59,
Tobias L. P. Lamson,
Addison Putnam,
Albion J. Dudley, '62, '63.

GEORGE GARDNER, CLERK.

1865.

Mayor:

JOSIAH G. PEABODY, * '50, '59, '60.

Aldermen:

Edw'd F. Watson '40, '41, *'44, *'45, *'60,
George W. Norris, '61, '62, * '64,
Dana B. Gove, * '64,
William T. McNeill, '62, * '64,
Henry H. Wilder, '53, '54, *'60,
Josiah Gates, '63,
Cyrus H. Latham, '63, *'64,
William Brown, '45, '46.

JOHN H. McALVIN, CITY CLERK.

Common Council:

WARD 1.

Alden B. Watson, '64,
Lewis L. Perrin, '64,
George N. Osgood,
John R. Southwick, '47.

WARD 2.

George Ripley, ‡'64, *President*,
Andrew F. Jewett, '64,
Julian V. Keyes,
Chester W. Rugg.

WARD 3.

Joseph S. Pollard, '64,
Charles W. Dodge, '64,
Edward C. Rice,
Frederick T. North.

WARD 4.

Francis Jewett, '64,
Benjamin Walker,
Benjamin L. Googins,
John Pearson.

WARD 5.

Charles Hubbard, '57, '64.
James Kent,
Simeon D. Osterhoudt,
James Foster.

WARD 6.

Tobias L. P. Lamson, '64,
Luke C. Dodge,
Gustavus A. Gerry,
James M. Moore, '55.

GEORGE GARDNER, CLERK.

1866.

Mayor:

JOSIAH G. PEABODY, * '50, '59, '60, † '65.

Aldermen:

Samuel A. Brown,
Albert B. Plimpton,
John R. Southwick, '47, '65,
Joseph L. Sargent '60, '61,
Charles W. Dodge, '64, '65,
Josiah Gates, '63, * '65,
Henry M. Hooke,
Albion J. Dudley, '62, '63, '64.

JOHN H. McALVIN, City Clerk.

Common Council:

Ward 1.

William A. Hodge,
William A. Wright, '63,
Jacob Baron, '61,
Rollin C. Downs, '62.

Ward 2.

Andrew F. Jewett, '64, '65,
George H. Whitmore,
Julian V. Keyes, '65,
Chester W. Rugg, '65.

Ward 3.

Edward C. Rice, '65,
Frederick T. North, '65,
James N. Pinkham,
Oliver W. Smith.

Ward 4.

Benjamin L. Googins, '65,
Alfred Scott,
Thomas F. Burgess,
Benjamin Walker, '65.

Ward 5.

Robert H. Butcher,
John T. Lee,
George L. Huntoon,
Jonathan Johnson, '55, * '56, * '57

Ward 6.

Gustavus A. Gerry, '65, *President*,
Luke C. Dodge, '65,
Charles A. Kimball,
Alfred H. Chase.

GEORGE GARDNER, Clerk.

1867.

Mayor:

GEORGE F. RICHARDSON, ‡ '62, ‡ '63, * '64.

Aldermen:

Charles B. Coburn, '44, '51, * '56,
Hoeum Hosford, '60, * '61, † '62, † '63, † '64,
John R. Southwick, '47, '65, * '66,
Joseph L. Sargent, '60, '61, * '66,
Edward C. Rice, '65, '66,
Abner W. Buttrick, '40, '44, '45, '50; died June 29, '67,
Wm. E. Livingston, el. Sept. 9, '67,
Wm. H. Parker, '61,
Albion J. Dudley, '62, '63, '64, * '66.

JOHN H. McALVIN, City Clerk.

Common Council:

Ward 1.

John Shepard,
Calvin Sawtell,
Foster Wilson,
M. Gilbert Perkins, '61.

Ward 2.

Gustavus A. Gerry, '65, ‡ '66, *President*,
Ruel J. Walker.
William Dobbins,
Silas Tyler, Jr.

Ward 3.

Jona. P. Folsom, '56, * '59, * '61, * '62,
Frederick T. North, '65, '66,
Samuel D. Prescott,
Nathan M. Wright.

Ward 4.

John B. Hunt,
John Q. A. Hubbard,
Alfred Scott, '66,
Thomas F. Burgess, '66.

Ward 5.

George L. Huntoon, '66,
George S. Cheney,
James Foster, '65,
John T. Lee, '66,

Ward 6.

Alfred H. Chase, '66,
James Lawton,
John N. Peirce, Jr.,
Foster Nowell, '60, '61, resigned. May 14, '67,
Wm. Kittredge, elected Sept. 9, '67.

GEORGE GARDNER Clerk.

1868.

Mayor:

GEORGE F. RICHARDSON, ‡ '62, ‡ '63, * '64, † '67.

Aldermen:

Charles B. Coburn, '44, '51, * '56, * '67,
Francis Jewett, '64, '65,
John M. Pevey, resigned in July,
Charles L. Hildreth, elected in Sept.,
Silas Tyler, Jr., '67,
Edward C. Rice, '65, '6(* '67,
William E. Livingston, * '67,
Frederick Frye, '62, '63,
Albion J. Dudley, '62, '63, '64, * '66, † 67.

JOHN H. McALVIN, City Clerk.

Common Council:

Ward 1.

Calvin Sawtell, '67,
John Shepard, '67,
John F. Merrill,
Frederick T. Greenhalge.

Ward 2.

Francis D. Munn,
Joseph A. Patten, '55,
Ruel J. Walker, '67,
Henry S. Orange, '61, '62, '63.

Ward 3.

George W. Badger,
Samuel D. Prescott, '67,
William Walker,
Albert A. Haggett.

Ward 4.

William H. Anderson,
John Q. A. Hubbard, '67,
Charles T. Crane,
John B. Hunt, '67,

Ward 5.

Edwin Lamson,
George S. Cheney, '67,
William Kelley,
Ethan N. Spencer.

Ward 6.

John N. Peirce, Jr., '67,
James Lawton, '67,
Francis Brown,
Alfred H. Chase, '66, '67, *President.*

GEORGE GARDNER, Clerk.

1869.

Mayor.

JONATHAN P. FOLSOM, '56, * '59, * '61, * '62, '67.

Aldermen:

Francis Jewett, '64, '65, * '68,
Henry H. Wilder, '53, '54, * '60, * '65,
Charles L. Hildreth, * '68,
Cyrus H. Latham, '63, * '64, * '65,
Hapgood Wright, '45, '46, * '56,
John Q. A. Hubbard, '67, '68,
George S. Cheney, '67, '68,
Charles A. Stott, '59, '60.

JOHN H. McALVIN, City Clerk. Resigned March 15, 1869,
SAMUEL A. McPHETRES, City Clerk. Elected March 15, 1869.

Common Council:

Ward 1.

Frederick T. Greenhalge, '68,
John H. Durgin, Jr.,
Patrick Keyes,
Benjamin Patch.

Ward 2.

Joseph A. Patten, '55, '68,
Phineas Jones,
Francis D. Munn, '68,
Amos Sanborn.

Ward 3.

George W. Badger, '68,
Albert A. Haggett, '68,
William Walker, '68,
George E. Pinkham.

Ward 4.

William H. Anderson, '68, *President,*
Simeon G. Lyford,
Henry P. Carter,
Epaphras A. Hill.

Ward 5.

William Kelley, '68,
Willard A. Brown,
William O. Fiske,
Edwin Lamson, '68.

Ward 6.

Francis Brown, '68,
Alpha B. Farr, '58,
Lucian P. Stacy, '55,
William Kittredge, '67

GEORGE GARDNER, Clerk.

1870.

Mayor:

JONATHAN P. FOLSOM, '56, *'59, *'61, *'62, '67, †'69.

Aldermen:

Edward F. Sherman,
Frank F. Battles,
Charles L. Hildreth, *'68, *'69,
Amos B. French,
Hapgood Wright, '45, '46, *'56, *'69,
John Q. A. Hubbard, '67, '68, *'69,
Addison Putnam, '64,
Charles A. Stott, '59, '60, *'69.

SAMUEL A. McPHETRES, City Clerk.

Common Council:

Ward 1.

John H. Durgin, Jr., '69,
Benjamin Patch, '69,
Patrick Keyes, '69,
Samuel G. Ladd.

Ward 2.

Phineas Jones, '69,
John L. Moulton,
Patrick Cummiskey,
David G. Skillings,

Ward 3.

Albert A. Haggett, '68, '69, *President*,
Henry P. Perkins, '60, '61,
Hocum Hosford, '60, *'61, †'62, †'63, †'64, *'67, declined,
Matthew Donovan,
John L. Meadowcroft, elected Jan. 24.

Ward 4.

Epaphras A. Hill, '69,
Henry P. Carter, '69,
Simeon G. Lyford, '69,
Michael Corbett.

Ward 5.

William O. Fiske, '69,
Willard A. Brown, '69,
James D. Hartwell,
Jeremiah Crowley.

Ward 6.

Alpha B. Farr, '58, '69,
William Kittredge, '67, '69,
Lucian P. Stacy, '55, '69,
John Stott.

GEORGE GARDNER, Clerk.

1871.

Mayor:

EDWARD F. SHERMAN, *'70.

Aldermen:

Frank F. Battles, *'70,
William F. Salmon, '58, '59, ‡'60,
John W. Smith, '49, '50,
Amos B. French, *'70,
Albert A. Haggett, '68, '69, ‡'70,
Henry C. Howe, '53, '54,
Frederick Ayer,
Addison Putnam, '64, *'70.

SAMUEL A. McPHETRES, City Clerk.

Common Council.

Ward 1.

John H. Durgin, Jr., '69, '70,
Samuel G. Ladd, '70,
Francis N. J. Haviland,
Joel Knapp.

Ward 2.

William Dobbins, '67,
John L. Moulton, '70,
Patrick Cummiskey, '70,
Amos A. Blanchard.

Ward 3.

Henry P. Perkins, '60, '61, '70, *President*,
John L. Meadowcroft, '70,
Horace Ela,
Julius C. Jockow.

Ward 4.

Benj. Walker, '65, '66,
Michael Corbett, '70,
Francis H. Chandler,
Charles T. Goddard.

Ward 5.

Jeremiah Crowley, '70,
Crawford Burnham,
Henry C. Church,
Patrick Lynch,

Ward 6.

Leonard Brown, '53, '54, '58, '59,
John Stott, '70,
Abel T. Atherton,
Nathaniel C. Sanborn.

GEORGE GARDNER Clerk.

1872.

Mayor:

JOSIAH G. PEABODY, * '50, '59, '60, † '65, † '66.

Aldermen:

Henry C. Howe, 53, '54, * '71,
Alexander G. Cumnock,
Benjamin Patch, '69, '70,
Gustavus A. Gerry, '65, ‡ '66, ‡ '67.
Frederick T. North, '65, '66, '67,
Benj. Walker, '65, '66, '71,
William Kelley, '68, '69,
Alpha B. Farr, '58, '69, '70.

SAMUEL A. McPHETRES, City Clerk.

Common Council:

Ward 1.

John E. Webb, '58, '59,
Alonzo F. Caswell,
Southwell Farrington,
True P. Jordan.

Ward 2.

Leonard Brown, '53, '54, '58, '59, '71,
Amos A. Blanchard, '71,
Joseph S. Brown,
Earl A. Thissell.

Ward 3.

Henry P. Perkins, '60, '61, '70, ‡ '71,
Horace Ela, '71, [*Pres.*,
Julius C. Jockow, '71,
Charles F. Tilton.

Ward 4.

Nathaniel P. Favor,
Nathan W. Frye,
Henry A. Lord,
Alonzo L. Russell.

Ward 5.

Crawford Burnham, '71,
Charles F. Belden,
Luther J. Eames,
William Shepard.

Ward 6.

Abel T. Atherton, '71,
Nathaniel C. Sanborn, '71,
Samuel M. Chase,
Julian Talbot.

GEORGE GARDNER, Clerk.

1873.

Mayor:

FRANCIS JEWETT, '64, '65, * '68, * '69.

Aldermen:

Jonathan P. Folsom, '56, * '59, * '61, * '62, '67, † '69, † '70,
George Runels, '62, * '64,
Edward Tuck, * '56, '58, * '59, declined,
Isaac Farrington, '46, '47, declined.
William Dobbins, '67, '71, elec. Jan. 14,
Charles A. F. Swan, elected Jan. 14,
Jacob H. Sawyer,
Jeremiah Crowley, '70, '71,
Alpha B. Farr, '58, '69, '70, * '72,
George Stevens.

SAMUEL A. McPHETRES, City Clerk.

Common Council:

Ward 1.

John E. Webb, '58, '59, '72,
Alonzo F. Caswell, '72,
Frank Brady,
Stephen J. Smiley.

Ward 2.

Joseph S. Brown, '72.
Earl A. Thissell, '72,
Daniel Stickney,
Edward P. Woods.

Ward 3. [*Pres.*

Albert A. Haggett, '68, '69, ‡ '70, * '71,
Charles F. Tilton, '72, resig'd March 1,
William Bass,
James Owens,
James A. Loughlin, elected April 8.

Ward 4.

Atwell F. Wright, '63, '64,
Nathaniel P. Favor, '72,
Nathan W. Frye, '72,
Henry A. Lord, '72.

Ward 5.

Robert H. Butcher, '66,
Charles F. Belden, '72,
Jared P. Maxfield,
George Smith.

Ward 6.

Nathaniel C. Sanborn, '71, '72,
Samuel M. Chase, '72,
George W. S. Hurd,
Artemas S. Tyler.

GEORGE GARDNER, Clerk.

1874.

Mayor:

FRANCIS JEWETT, '64, '65, * '68, * '69, † '73.

Aldermen:

Jeremiah Crowley, '70, '71, * '73.
Benj. Walker, '65, '66, '71, * '72,
Alonzo F. Caswell, '72, '73,
Joseph S. Brown, '72, '73,
Jonathan Kendall, '42, '44, '52,
George L. Huntoon, '66, '67,
Nathaniel C. Sanborn, '[illegible], '72, '73,
George Stevens, * '73.

SAMUEL A. McPHETRES, City Clerk.

Common Council:

Ward 1.

Charles A. Welch, '57,
Frank Brady, '73,
Stephen J. Smiley, '73,
Charles H. Harvey.

Ward 2.

Daniel Stickney, '73,
Edward P. Woods, '73,
Charles J. Eastman,
Edward E. Reed.

Ward 3.

Julius C. Jockow, '71, '72,
James Owens, '73,
James A. Loughlin, '73,
George W. Tilton.

Ward 4.

Charles T. Goddard, '71,
Nathan W. Frye, '72, '73, *President*,
Jacob H. Sawyer, * '73,
Julian A. Richardson.

Ward 5.

Jared P. Maxfield, '73,
John B. Lyford,
Samuel P. Marin,
John Scott.

Ward 6.

George W. S. Hurd, '73.
Joel A. Abbott,
Thomas Carolin
Jason Fuller.

GEORGE GARDNER, Clerk, died May 29.
DAVID CHASE, Clerk, elected June 4.

1875.

Mayor:

FRANCIS JEWETT, '64, '65, * '68, * '69, † '73, † '74.

Aldermen:

Benj. Walker, '65, '66, '71, * '72, * '74,
Jacob Rogers,
John A. Goodwin,
Joseph S. Brown, '72, '73, * '74,
Hapgood Wright, '45, '46, * 56, * '65
James Owens, '73, '74,
Alden B. Richardson,
Samuel A. Chase.

SAMUEL A. McPHETRES, City Clerk.

Common Council:

Ward 1.

Charles A. Welch, '57, '74,
Charles H. Harvey, '74,
John F. Howard,
John W. Welch.

Ward 2.

Earl A. Thissell, '72, '73,
Edward E. Reed, 74,
William A. Read,
Leavitt R. J. Varnum.

Ward 3.

Albert A. Haggett, '68, '69, † '70, * '71,
George W. Tilton, '74, [† '73, *Pres.*
Charles Cowley,
Thomas R. Garity.

Ward 4.

Josiah Butler,
Francis Carll,
Edward P. Dennis,
Edward Stockman

Ward 5

James D. Hartwell, '74,
John B. Lyford, '74,
Orford R. Blood,
Charles W. Sleeper.

Ward 6.

Joel A. Abbott, '74,
Thomas Carolin, '74,
Jason Fuller, '74,
Albert D. Wright.

DAVID CHASE Clerk

1876.

Mayor.

CHARLES A. STOTT, '59, '60, *'69, *'70.

Aldermen:

Jacob Rogers, *'75,
John A. Goodwin, *'75, [‡ '73, ‡ '75,
Albert A. Haggett, '68, '69, ‡ '75, *'71,
Charles F. Belden, '72, '73.
Henry A. Hildreth,
George E. Stanley,
Francis Carll, '75,
William H. Wiggin, '57.

SAMUEL A. McPHETRES, City Clerk.

Common Council:

Ward 1.

John W. Welch, '75,
Lewis Stiles,
Daniel W. Manning,
David M. Collins, '56, declined,
John F. Howard, '75, elected Jan. 11.

Ward 2.

Leavitt R. J. Varnum, '75,
Charles E. Hallowell,
Charles Callahan,
William A. Read, '75.

Ward 3.

Charles Cowley, '75,
Charles H. Kimball,
Charles Runels,
James Howard, died after election,
William H. Grady, elected Jan. 11.

Ward 4.

Edward Stockman, '75, res. May 23,
Gardner W. King,
Stephen H. Jones,
Charles D. Starbird,
James W. Bennett, elected June 22.

Ward 5.

Orford R. Blood, '75,
John F. Kimball, [*Pres. from* May 23
Charles H. Hanson,
M. Gilbert Perkins, '61, '67.

Ward 6.

Edwin Sanborn,
Benjamin C. Dean, *Pres.*, res. May 23,
Charles H. Walker,
John J. Pickman,
Willis Farrington, elected June 22

DAVID CHASE, Clerk.

1877.

Mayor:

CHARLES A. STOTT, '59, '60, *'69, *'70, †'76.

Aldermen:

Jeremiah Crowley, '70, '71, *'73, *'74,
Horace R. Barker,
George E. Stanley, *'76,
Charles H. Kimball, '76,
George P. Walker,
Orford R. Blood, '75, '76, seat vacated,
Stephen B. Puffer, dec. el. Jan. 2,
Robert Park,
George E. Pinkham, '69.

SAMUEL A. McPHETRES, City Clerk.

Common Council:

Ward 1.

Daniel W. Manning, '76,
Lewis Stiles, '76,
John Courtney,
Frank Brady, '73, '74, res. March 27,
Jared P. Maxfield, '73, '74, elec. May 8.

Ward 2.

Charles E. Hallowell, '76,
Francis D. Munn, '68, '69,
Charles H. Robbins,
Oliver M. Harding.

Ward 3.

William H. Grady, '76,
Patrick Lynch,
Simon Kelly,
George E. Davis.

Ward 4.

Gardner W. King, '76,
James W. Bennett, '76,
Irving K. Goodale,
Orlendo Blodgett.

Ward 5.

John F. Kimball, ‡ '76, *President*,
Charles H. Hanson, '76,
Peter S. Coburn,
Robert Goulding.

Ward 6.

Edwin Sanborn, '76,
John J. Pickman, '76,
Charles H. Walker, '76,
Augustus E. Spaulding, d. Jan. 10,
George S. Cushing, elected Feb. 6.

DAVID CHASE, Clerk,

1878.

Mayor:

JOHN A. G. RICHARDSON.

Aldermen:

Stephen B. Puffer, * '77,
Robert Park, * '77,
Horace R. Barker, * '77,
George F. Scribner, '57,
George E. Scripture,
Joseph S. Pollard, '64, '65, [* '77,
Jeremiah Crowley, '70, '71, *'73, *'74,
Nathaniel C. Sanborn, '71, '72, '73, *'74.

SAMUEL A. McPHETRES, City Clerk.

Common Council:

Ward 1.

John Courtney, '77,
John J. Mealey,
Joseph M. Ambrose,
Charles H. Harvey, '74, '75.

Ward 2.

Oramel A. Brigham,
Edward M. Tucke,
William W. Clark,
Albert W. Monty.

Ward 3.

Simon Kelly, '77,
Edward Cawley,
Henry P. Morris,
Samuel D. Butterworth.

Ward 4.

Irving K. Goodale, '77,
Orlendo Blodgett, 77,
Robert G. Bartlett,
Stephen H. Jones, '76.

Ward 5.

Robert Goulding, '77,
Peter S. Coburn, '77,
John F. Kimball, ‡ '76, ‡ '77, *President*,
Enos O. Kingsley, '56.

Ward 6.

George S. Cushing, '77,
Eli W. Hoyt,
Luke B. Taylor,
Miles F. Brennan, to Jan. 22,
Thomas Nesmith, from Jan. 22.

DAVID CHASE, Clerk,

1879.

Mayor:

JOHN A. G. RICHARDSON, †'78.

Aldermen:

Horace R. Barker, * '77, * '78,
Charles A. R. Dimon,
Joseph S. Pollard, '64, '65, * '78,
Charles S. Lilley,
George E. Scripture, * '78,
George F. Scribner, '57, * '78,
Charles F. Howe,
Robert Goulding, '77, '78.

SAMUEL A. McPHETRES, City Clerk.

Common Council:

Ward 1.

Joseph M. Ambrose, '78,
John O'Donnell,
James Kelly,
Richard J. Noonan.

Ward 2.

Albert W. Monty, '78,
Charles H. Richardson,
William K. Chase, res. Nov. 25,
Edwin A. Robinson,
Edward M. Tucke, '78, elect. Dec. 9.

Ward 3.

Edward Cawley, '78,
Henry P. Morris, '78,
William T. Benson,
Patrick A. Rogers.

Ward 4.

Robert G. Bartlett, '78,
Fred Woodies,
Charles F. Varnum,
Charles E. Farrington.

Ward 5.

Albert W. Burnham,
Ambrose L. Ready,
Joseph M. Wilson,
Edward B. Peirce, *President*.

Ward 6.

Eli W. Hoyt, '78,
Luke B. Taylor, '78,
Major A. Shaw,
Miles F. Brennan, '78.

DAVID CHASE, Clerk.

1880.

Mayor:

FREDERICK T. GREENHALGE, '68, '69.

Aldermen:

James D. Hartwell, '70, '75,
Atwill P. Wright, '63, '64,
Charles H. Richardson,
Edwin Lamson, '68, '69,
Isaac F. Scripture, *'62, *'63,
Robert Wood,
Charles H. Coburn,
James C. Abbott.

SAMUEL A. McPHETRES, City Clerk.

Common Council.

Ward 1.

James Kelly, '79,
Richard J. Noonan, '79,
Thomas J. Flynn,
Lawrence Cummings.

Ward 2.

Edwin A. Robinson, '79,
Wilbur L. Bates,
Samuel W. Foster,
Earl A. Thissell, '72, '73, '75, *Pres.*

Ward 3.

Peter H. Donohoe,
William T. Benson, '79,
Patrick A. Rogers, '79,
Frank Wood.

Ward 4.

Fred Woodies, '79,
Charles F. Varnum, '79,
Charles E. Farrington, '79,
Charles D. Starbird, '76.

Ward 5.

Joseph M. Wilson, '79,
Ambrose L. Ready, '79,
Samuel Hosmer,
Edward B. Peirce, ‡'79.

Ward 6.

Benjamin F. Freeman,
J. Tyler Stevens,
Charles C. Hutchinson,
Henry C. Cooper.

DAVID CHASE, Clerk.

1881.

Mayor:

FREDERICK T. GREENHALGE, '68, '69, †'80.

Aldermen:

Charles H. Richardson, *'80,
Isaac F. Scripture, *'62, *'63, *'80,
Robert Wood, *'80,
Ambrose L. Ready, '79, '80,
Levi Sprague, '59, '64,
Julius A. Stiles,
Samuel D. Butterworth, '78,
Thomas R. Garity, '75.

SAMUEL A. McPHETRES, City Clerk.

Common Council:

Ward 1.

Thomas J. Flynn, '80,
Lawrence Cummings, '80,
Robert J. Thomas,
Jeremiah J. Hayes.

Ward 2.

Zachariah D. Hall,
James M. Howe, '57, '59,
Hubert M. Potter,
Moses Gibson.

Ward 3.

Frank Wood, '80,
Peter H. Donohoe, '80,
John E. Maguire,
D. Moody Prescott.

Ward 4.

Julius C. Johnson,
Stephen C. Davis,
Edward Garner,
William N. Osgood.

Ward 5.

Atkinson C. Varnum,
Samuel Hosmer, '80,
Samuel P. Marin, '74,
Albert W. Burnham, '79.

Ward 6.

Charles C. Hutchinson, '80, *Pres't.*
Albert G. Thompson,
Thomas Nesmith, '78,
Lawrence J. Smith.

DAVID CHASE, Clerk.

1882.

Mayor.

GEORGE RUNELS, '62, *'64.

Aldermen:

Thomas R. Garity, '75, * '81, *Chair'n.*
* Charles W. Sleeper,
George B. Smith,
William A. Wright, '63, '66,
David Whitaker,
D. Moody Prescott, '81,
George S. Cushing, '77, '78,
John F. Phillips,
† John Welch.

‡ SAMUEL A. McPHETRES, City Clerk.
§ DAVID W. O'BRIEN, " "

* Resigned, May 23; special election to fill vacancy, June 20.
† Elected June 20, to fill vacancy. ‡ Died Sept. 29, 1882. § Elected Oct. 4, 1882.

Common Council:

Ward 1.

Robert J. Thomas, '81,
Jeremiah J. Hayes, '81,
Dennis J. Crowley,
John A. Walsh.

Ward 2.

Zachariah D. Hall, '81,
James M. Howe, '57, '59, '81,
Moses Gibson, '81,
James F. Puffer, Jr.

Ward 3.

Frank Wood, '80, '81,
John E. Maguire, '81,
John J. Mead,
James Grady.

Ward 4.

Julius C. Johnson, '81,
Stephen C. Davis, '81,
Edward Garner,
William N. Osgood, '81, *Pres.*

Ward 5.

Atkinson C. Varnum, '81,
Albert W. Burnham, '79, '81,
Artemas B. Woodworth,
Horace B. Barnes.

Ward 6.

Albert G. Thompson, '81,
Lawrence J. Smith, '81,
Thaddeus S. Cobb,
Miles J. Fletcher.

DAVID CHASE, Clerk.

1883.

Mayor:

JOHN J. DONOVAN.

Aldermen:

John F. Phillips, *'82, *Chairman,*
George B. Smith, *'82.
Robert J. Thomas, '81, '82,
David Whitaker, *'82.
D. Moody Prescott, '81, *'82.
Geo. W. Fifield,
John Welch, *'82,
Miles J. Fletcher, '82.

DAVID W. O'BRIEN, City Clerk.

Common Council:

Ward 1.

Dennis J. Crowley, '82,
John J. Hogan,
James H. Cahill,
Daniel Murphy,

Ward 2.

Samuel Lawrence, '50,
Joseph S. Brown, '72, '73, * 74, *'75,
Albert W. Monty, '78, '79,
John F. Thissell.

Ward 3.

James Grady, '82,
John J. Mead, '82,
Patrick J. Smith,
Frank J. Donohue.

Ward 4.

James G. Elliott,
Solomon K. Dexter,
Alonzo L. Russell, '72,
Geo. A. Bennett.

Ward 5.

Edward B. Peirce, ‡ '79, '80, *Pres't*
Artemas B. Woodworth, '82,
John P. Mahoney,
Geo. L. Ashworth.

Ward 6.

Lawrence J. Smith, '81, '82.
Thaddeus S. Cobb, '82,
J. Frank Page,
Michael F. Clark.

DAVID CHASE, Clerk.

1884.

Mayor:

JOHN J. DONOVAN, †'83.

Aldermen:

Robert J. Thomas, '81, '82, *'83, *Ch'n*,
Miles J. Fletcher, '82, *'83,
George W. Fifield, '83,
Thaddeus S. Cobb, '82, '83,
Edward B. Quinn,
Jeremiah Crowley, '70, '71, *'74, *'77, *'78,
Peter H. Donohoe, '80, '81,
Freeman B. Shedd.

DAVID W. O'BRIEN, City Clerk.

Common Council:

Ward 1.

John J. Hogan, '83, *President*,
James H. Cahill, '83,
Daniel Murphy, '83,
James H. Morrison.

Ward 2.

Joseph S. Brown, '72, '73, *'74, *'75, '83,
Albert W. Monty, '78, '79, '83,
Earl A. Thissell, '72, '73, '75, ‡'80,
John R. Pike.

Ward 3.

Patrick J. Smith, '83,
Peter J. Brady,
Thomas J. Sparks,
John Nolan.

Ward 4.

James G. Elliott, '83,
Solomon K. Dexter, '83,
Alonzo L. Russell, '72, '83,
George A. Bennett, '83.

Ward 5.

Edward B. Peirce, ‡ 79, '80, ‡ 83,
George L. Ashworth,
Joseph M. Wilson, '79,
James S. Hanson.

Ward 6.

J. Frank Page, '83,
Michael F. Clark, '83,
Alfred M. Chadwick,
Marcellus H. Fletcher.

DAVID CHASE, Clerk.

1885.

Mayor.

EDWARD J. NOYES.

Aldermen:

John F. Phillips, *'82, *'83, *Chairman*,
John F. Howe, '57, '58, *'59,
William D. Brown,
George E. Stanley, *'76, *'77,
James D. Hartwell, '70, '75, *'8c,
George F. Penniman,
Oliver E. Cushing,
James Francis.

SAMUEL M. CHASE, City Clerk.

Common Council:

Ward 1.

Patrick H. Plunkett,
James H. Morrison, '84,
Thomas J. Enright,
Henry F. Keyes.

Ward 2.

George W. Brothers,
Walter M. Sawyer,
James R. Fulton,
Francis D. Munn, Jr.

Ward 3.

Peter J. Brady, '84,
Patrick J. Smith, '83, '84,
John Nolan, '84,
Thomas J. Sparks, '84.

Ward 4.

Arnold S. Welch,
George A. Roper,
William A. Lang,
Frank W. Howe.

Ward 5.

Wilson W. Carey,
James S. Hanson, '84,
Henry L. Newhall,
Elwyn W. Lovejoy.

Ward 6.

Alfred M. Chadwick, '84, *Pres't*,
George R. Richardson,
Luke B. Taylor, '78, '79,
William H. White.

DAVID CHASE, Clerk.

1886.

MAYOR:

JAMES C. ABBOTT.

ALDERMEN:

Jeremiah Crowley, '70, '71, *'73, *'74. *'77, *'78, *'84, *Chairman.*
John F. Phillips, *'82, *'83, *'85,
Stephen B. Puffer, *'77, *'78,
George E. Stanley, *'76, *'77, *'85,
Daniel Wright,
Samuel D. Butterworth, *'78, *'81,
George F. Penniman, *'85,
James Francis, *'85.

SAMUEL CHASE, *City Clerk.*

COMMON COUNCIL:

WARD 1.

Peter B. Sherlock,
Patrick H. Plunkett, '85,
Thomas J. Enright,
Timothy H. Brennan.

WARD 2.

Walter M. Sawyer, '85, *President.*
Charles H. Richardson, '79,
James R Fulton, '85,
Francis D. Munn, Jr., '85.

WARD 3.

Daniel Cleary, '85,
Patrick J. Mahan,
Edward D. McVey,
Thomas J. Sparks, '84, '85.

WARD 4.

Arnold S. Welch, '85,
George A. Roper, '85,
Frank W. Howe, '85,
William A. Lang, '85.

WARD 5.

Henry L. Newhall, '85.
Elwyn W. Lovejoy, '85,
Wilson W. Carey, '85,
Roswell M. Boutwell, '85.

WARD 6.

Lawrence J. Smith, '81, '82, '83,
John E. Drury,
Charles H. Hobson,
Marcellus H. Fletcher, '84.

DAVID CHASE, *Clerk.*

1887.

MAYOR:

JAMES C. ABBOTT. † '86.

ALDERMEN:

Stephen B. Puffer, *'77, *'78, *'86, *C'n,*
Nathan D. Pratt,
Francis C. Plunkett,
August Fels,
Peter H. Donohoe, '80, '81, *'84,
Miles J. Fletcher, '82, *'83, *'84,
Frederick Frye, '62, '63, *'68,
Marcellus H. Fletcher, '84, '86.

DAVID W. O'BRIEN, *City Clerk.*

COMMON COUNCIL:

WARD 1.

Michael J. Garvey,
Dennis A. Sullivan,
Daniel Murphy, '83, '84,
Dennis J. Leary.

WARD 2.

Walter M. Sawyer, ‡'86,
Charles H. Richardson, '79, '86,
George C. Evans,
Horace P. Beals.

WARD 3.

George B. McKenna,
John Nolan, '84, '85,
Daniel Cleary, '86,
Patrick J. Smith, '83, '84, '85.

WARD 4.

Millard F. Wright,
Edmund B. Conant,
Jessie H. Shepard,
Richard Dobbins.

WARD 5.

Roswell M. Boutwell, '86,
George W. Brothers, '85,
Clarence G. Coburn,
James H. Carmichael, *Pres't.*

WARD 6.

Richard B. Allen,
John E. Drury, '86,
Patrick Conlon,
Edward Gallagher.

WILLIAM J. COUGHLIN, *Clerk*

1888.

MAYOR:

CHARLES D. PALMER.

ALDERMEN:

George A. Scribner,
George E. Putnam,
Charles Runels, '76,
Charles E. Carter,
Edward D. Holden,
Arthur Staples.
Roswell M. Boutwell, '86, '87,
Alfred M. Chadwick, *Chairman*, '84, ‡'85.

GIRARD P. DADMAN, *City Clerk.*

COMMON COUNCIL:

WARD 1.

Dennis A. Sullivan, '87,
Dennis J. Leary, '87,
Daniel Murphy, '83, '84, '87,
Michael J. Garvey, '87.

WARD 2.

Frank J. Sherwood,
Horace P. Beals, '87,
Harry E. Shaw,
Pierre A. Brousseau.

WARD 3.

John F. Rogers,
Owen M. Donohoe,
Thomas J. Sparks, '84, '85, '86,
*John F. Roane,
†Patrick H. Brosnahan.

*Resigned Aug. 9. Special Election to fill vacancy Sept. 18.
†Elected Sept. 18 to fill vacancy.

WARD 4.

*Millard F. Wright, '87,
Edmund B. Conant, *President*, '87,
Jesse H. Shephard, '87,
Richard Dobbins, '87,
†Alonzo G. Walsh.

*Resigned April 24. Special Election to fill vacancy June 5.
†Elected June 5 to fill vacancy.

WARD 5.

Charles C. Hartwell,
Clarence G. Coburn, '87,
George W. Brothers, '85,
Joseph S. Lapierre.

WARD 6.

William E. Westall,
Frank Brown,
Richard B. Allen, '87,
Abbott Lawrence.

DAVID CHASE, *Clerk.*

1889.

MAYOR:

CHARLES D. PALMER. † '88.

ALDERMEN:

George A. Scribner, *'88,
Walter M. Sawyer, ‡'86, '87,
George E. Putnam, *'88,
Edward D. Holden,
Roswell M. Boutwell, *Ch'n*, '86, '87, *'88,
John H. Fuller,
William F. Senter,
John E. Drury, '86, '87.

GIRARD P. DADMAN, *City Clerk.*

COMMON COUNCIL:

WARD 1.

Patrick J. Savage,
Joseph H. Callahan,
Daniel H. Courtney,
William J. Johnson.

WARD 2.

*Samuel C. George,
Pierre A. Brousseau, '88,
Arthur H. Cluer,
Frank J. Sherwood, '88,
†James Stuart Murphy.

*Resigned June 9.
†Elected July 2, to fill vacancy.

WARD 3.

Owen M. Donohoe, '88,
Stephen Garrity,
Patrick H. Brosnahan, '88,
Thomas J. Sparks, '84, '85, '86, '88.

WARD 4.

B. Frank Hale,
Edwards Cheney,
Alonzo G. Walsh, '88,
Frank Gray.

WARD 5.

Orford R. Blood, '75, '76,
Charles C. Hartwell, '88,
Henry W. Ladd,
Henry J. Draper.

WARD 6.

William E. Westall, *Pres't*, '88,
Abbott Lawrence, '88,
Albert Crowell,
Frank Brown, '88.

DAVID CHASE, *Clerk.*

1890.

Mayor:

CHARLES D. PALMER, †'88, †'89.

Aldermen:

Albert D. Carter,
Watson A. Dickinson,
John E. Drury, '86, '87, *'89,
Edmund D. Fletcher,
John H. Fuller, *'89, *Chairman*,
Walter M. Sawyer, ‡'86, '87, *'89,
Samuel E. Snow,
Joseph M. Wilson, '79, '80, '84.

GIRARD P. DADMAN, *City Clerk.*

Common Council:

WARD 1.

Joseph H. Callahan, '89,
Daniel H. Courtney, '89,
William J. Johnson, '89,
Patrick J. Savage, '89.

WARD 2.

Newell Abare,
Arthur H. Cluer, '89,
Walter C. Coburn,
James Stuart Murphy, '89.

WARD 3.

Patrick H. Brosnahan, '88, '89,
Robert C. Gallagher,
Charles L. Marren,
Thomas J. Sparks, '84, '85, '86, '88, '89.

WARD 4.

Edwards Cheney, '89,
Frank Gray, '89,
B. Frank Hale, '89,
Alonzo G. Walsh, '88, '89, *President.*

WARD 5.

Orford R. Blood, '75, '76, '89,
Herbert M. Jacobs,
Henry W. Ladd, '89,
Louis P. Turcotte.

WARD 6.

Albert Crowell, '89,
Daniel D. Driscoll,
James Gookin,
Edward F. Spalding.

DAVID CHASE, *Clerk.*

ORDINANCES OF THE CITY OF LOWELL,

PASSED SINCE 1883.

CITY OF LOWELL.

In the Year Eighteen Hundred and Eighty-four.

AN ORDINANCE REGULATING THE ERECTION AND MAINTENANCE OF WIRES IN STREETS AND WAYS.

Be it ordained, by the City Council of the City of Lowell, as follows:

SECTION 1. The Mayor and Aldermen may give to telegraph' telephone, electric light, and other companies desirous of erecting and maintaining wires in the streets and ways of the city, instruments in writing specifying where in said streets and ways the posts of said companies may be located, the kind of posts, and the height to which, and the places where, the wires of said companies shall run. *Provided*, that no such company shall be permitted to erect or maintain their said wires in such positions as to cross from above any wire of the Lowell fire-alarm telegraph. And provided further, that any and all of said companies shall erect and maintain the top-most cross-bar on their said posts for the exclusive use of the wires of the said Lowell fire-alarm telegraph, and such other wires as the city may at any time attach thereto for its own use.

In Common Council, Dec. 10, 1884.

Passed to be ordained.

JOHN J. HOGAN, President.

In Board of Aldermen, Dec. 16, 1884.

Passed to be ordained.

ROBERT J. THOMAS, Chairman.

Approved Dec. 31, 1884.

JOHN J. DONOVAN, Mayor.

CITY OF LOWELL.

In the Year Eighteen Hundred and Eighty-five.

AN ORDINANCE PROHIBITING THE SALE OR RENTAL OF CITY PROPERTY BY CITY OFFICIALS.

Be it ordained, by the City Council of the City of Lowell, as follows:

No property of the city of Lowell shall be sold, let or rented, or disposed of in any way by a superintendent of any department, or by a member of any committee, or by any officer or official whatever, or except by and in pursuance of a vote of an appropriate committee, or of the City Council.

And no property or material sold shall be delivered to the purchaser until the same has been paid for to the City Treasurer, and a receipted bill for the payment of the same shall be shown.

In Common Council, May 26, 1885.

Passed to be ordained.

A. M. CHADWICK, President.

In Board of Aldermen, June 2, 1885.

Passed to be ordained.

JOHN F. PHILLIPS, Chairman.

Approved.

EDWARD J. NOYES, Mayor.

CITY OF LOWELL.

In the Year Eighteen Hundred and Eighty-five.

An Ordinance to Regulate the Construction, Use and Repairs of Water Pipes and Fixtures.

Be it ordained, by the City Council of the City of Lowell, as follows:

Section 1. All plumbing and piping work done in the construction of all water pipes and fixtures, through which, or by means of which, water is furnished or distributed by the city, whether such pipes and fixtures belong to the city or not, shall be done by a plumber or piper licensed, as hereinafter provided, by the Board of Aldermen.

Sect. 2. Licenses for the purpose named in Sect. 1 may be granted for the term of one year to any plumber or piper, or firm of plumbers or pipers, or firms employing plumbers or pipers, upon the payment of a license fee of one dollar ($1). Every person or firm so licensed shall give bonds to the city in the sum of three hundred dollars ($300), with sureties, to be approved by the board of Aldermen, conditioned to perform all work in a skilful and workmanlike manner, to observe all rules and regulations now made or hereafter made by the Water Board, and to save the city harmless from all claims and damages resulting from imperfect or unskilful work, or negligence by them, their agents, or sevants.

Sect. 3. The Water Board is hereby authorized to make such rules and regulations as to it shall seem fit, respecting plumbers and pipers and plumbing and piping work, in connection with water pipes and fixtures; *provided*, that such rules and regulations are submitted to and approved by the Board of Aldermen.

Sect. 4. No person shall perform any labor in the nature of plumbing or piping upon or in connection with any water pipes

or fixtures through which or by means of which water is furnished or distributed by the city of Lowell, whether such pipes or fixtures are owned by the city or not, except under the authority of the license hereinbefore named, on pain of forfeiting a sum of not less than five dollars ($5), nor more than twenty dollars ($20), for each offense.

SECT. 5. No person shall remove or interfere with any water meter, unless especially authorized so to do by the Water Board, on pain of forfeiting a sum not less than five dollars ($5), nor more than twenty dollars ($20), for each offense.

SECT. 6. This act shall take effect from and after its passage.

In Common Council, July 14, 1885.

Passed to be ordained.

ALFRED M. CHADWICK, President.

In Board of Aldermen, July 21, 1885.

Passed to be ordained.

JOHN F. PHILLIPS, Chairman.

Approved July 22, 1885.

EDWARD J. NOYES, Mayor.

CITY OF LOWELL.

In the Year Eighteen Hundred and Eighty-five.

AN ORDINANCE CHANGING THE TITLE OF AN OFFICER OF THE CITY.

Be it ordained, by the City Council of the City of Lowell, as follows:

That wherever the words "City Marshal" appear in the Revised Ordinances of the City of Lowell, the same be stricken out, and the words "Chief of Police" inserted in place thereof.

In Common Council, Dec. 31, 1885.

Passed to be ordained.

ALFRED M. CHADWICK, President.

In Board of Aldermen, Dec. 31, 1885.

Passed to be ordained.

JOHN F. PHILLIPS, Chairman.

Approved Dec. 31, 1885.

EDWARD J. NOYES, Mayor.

CITY OF LOWELL.

In the Year Eighteen Hundred and Eighty-six

AN ORDINANCE TO AMEND CHAPTER FOURTEEN OF THE REVISED ORDINANCES OF 1883.

Be it ordained, by the City Council of the City of Lowell, as follows:

That Sect. 2 of Chap. 14 of the Revised Ordinances of 1883 be amended as follows:—

By striking out the word "and" at the beginning of the second line and inserting in place thereof the word "the."

By inserting after the word "council" in the same line, the words "and Superintendent of Public Schools."

By striking out the words "one from each ward" in the third line and by striking out all after the word "years" in the eleventh line.

That Sect. 4 be amended by striking out all after the word "chosen" in the first line, and inserting the following: "In the month of December, 1886, and whenever a vacancy occurs, by a vote of the Board of Directors, a Librarian of the City Library, who shall hold his office until removed for cause."

That Sect. 5 be amended by inserting after the word "said" at the beginning of the eighth line, the words "library and."

In Common Council, March 23, 1886.

Passed to be ordained.

WALTER M. SAWYER, President.

In Board of Aldermen, March 30, 1886.

Passed to be ordained.

JEREMIAH CROWLEY, Chairman.

Approved March 31, 1886.

J. C. ABBOTT, Mayor.

CITY OF LOWELL.

In the Year Eighteen Hundred and Eighty-six.

AN ORDINANCE FOR THE REGULATION OF PLUMBING.

Be it ordained, by the City Council of the City of Lowell, as follows:

SECTION 1. No person shall carry on the business of plumbing unless he shall have first registered his name and place of business in the office of the City Engineer, and notice of any change in the place of business of a registered plumber shall be immediately given to said City Engineer.

SECT. 2. Every plumber, before doing any work in a building, shall except in the case of repairs or leaks, file at the office of the City Engineer, upon blanks to be provided by the Board of Health for the purpose, a notice of the work to be performed. No person shall commence work on such drainage, or plumbing, until the plans are approved by the Board of Health. Plans and specifications shall be approved or rejected within five days of the time of filing.

SECT. 3. The Board of Health must be notified when any work is ready for inspection, and all work must be left uncovered and convenient for examination until inspected and approved.

SECT. 4. Every building shall be separately and independently connected with the common sewer, or cesspool, said cesspool to be approved by the Board of Health.

SECT. 5. Drains and soil-pipes, through which water and sewage is used and carried, shall be of iron, or Akron, or cement drain-pipe, to be approved by the Board of Health when within a building. They shall be supplied with a suit-

able trap placed with an accessible clean-out, either outside or inside the foundation wall of the building. There shall be a fresh air inlet pipe entering the soil-pipe or drain on the house side of the main trap of not less than four inches internal diameter. All soil-pipes shall be carried out through the roof, open and undimished in size, to such height as may be directed by the Board of Health, but no soil-pipe shall be carried to a height less than two feet above the roof.

SECT. 6. Every sink, basin, bath-tub, water-closet, slop-hopper, and each set of trays, and every fixture having a waste-pipe, shall be furnished with a trap, which shall be placed as near as practicable to the fixture that it serves. Traps shall be protected from siphonage, or air pressure by special air-pipes of a size not less than the waste-pipe; but air-pipes from water-closet traps shall be of not less size than two-inch bore for thirty feet or less, and not less than three-inch bore for more than thirty feet, and shall be run as direct as practicable.

SECT. 7. Drip or overflow pipes from safes under water-closets and other fixtures, or from tanks or cisterns, shall be run to some place in open sight, and in no case shall any such pipe be connected directly with a drain waste-pipe or soil-pipe. Waste-pipe from refrigerators, or other receptacles in which provisions are stored, shall not be connected with a drain soil-pipe or other waste-pipe.

SECT. 8. Every water-closet, or line of water-closets on the same floor, shall be supplied with water from a tank or cistern, and the flushing-pipe shall not be less than one inch in diameter; *provided*, that where it is impracticable by reason of frost, the Board of Health may give a written permission for other service.

SECT. 9. The provisions of Sects. 3 to 9 inclusive of this

ordinance shall apply only to buildings erected, or to work performed after its passage.

In Common Council, April 27, 1886.

Passed to be ordained.

W. M. SAWYER, President.

In Board of Aldermen, May 18, 1886.

Passed to be ordained.

JEREMIAH CROWLEY, Chairman.

Approved May 20, 1886.

JAMES C. ABBOTT, Mayor.

CITY OF LOWELL.

In the Year Eighteen Hundred and Eighty-seven.

AN ORDINANCE AMENDING SECTION ONE, CHAPTER TWENTY, OF THE ORDINANCES RELATING TO ELECTION OF CHIEF ENGINEER OF FIRE DEPARTMENT.

Be it ordained, by the City Council of the City of Lowell, as follows:

That Chap. 20, Sect. 1, of the City Ordinances be, and the same hereby is, amended as follows, viz.: By inserting between the word "require" in the fifth line of said section, and the word "and" in the sixth line, the following words:—

"The Chief Engineer shall be appointed by the Mayor and Aldermen in the month of March or April, and whenever a vacancy occurs, and he shall enter upon the discharge of the duties of said office on the first day of May of the year in which appointed, if appointed for a full term, prior to May of any year, and he shall hold said office for the term of three years, from said first day of May, or until he is removed, and if appointed after the first day of May of any year, he shall enter upon the discharge of the duties of said office forthwith, and shall continue therein until the expiration of the full term as existing at the time of his said appointment, or until removed."

And by inserting the word "assistant" between the word "said" and the word "engineers" in the sixth line of said section.

And by inserting between the words "member" and "no" in the sixteenth line of said section, the following words, viz.:

"Except that the Chief Engineer shall not be removed without a hearing and cause shown thereat."

In Common Council, Oct. 11, 1887.

Passed to be ordained.

JAMES H. CARMICHAEL, President.

In Board of Aldermen, Nov. 8, 1887.

Passed to be ordained.

STEPHEN B. PUFFER, Chairman.

Approved Nov. 11, 1887.

JAMES C. ABBOTT, Mayor.

CITY OF LOWELL.

In the Year Eighteen Hundred and Eighty-seven.

AN ORDINANCE TO AMEND CHAPTER NINE OF THE REVISED ORDINANCES.

Be it ordained, by the City Council of the City of Lowell, as fallows :

That Sect. 1, Chap. 9, of the Revised Ordinances be, and the same is, hereby amended, by striking out the word "February" and inserting instead thereof the word "April."

In Common Council, Nov. 14, 1887.

Passed to be ordained.

JAMES H. CARMICHAEL, President.

In Board of Aldermen, Nov. 21, 1887.

Passed to be ordained.

STEPHEN B. PUFFER, Chairman,

Approved.

JAMES C. ABBOTT, Mayor.

CITY OF LOWELL.

In the Year Eighteen Hundred and Eighty-seven.

AN ORDINANCE AMENDING THE ORDINANCES OF THE CITY OF LOWELL, AND DEFINING AND LIMITING THE POWERS OF STANDING COMMITTEES.

Be it ordained, by the City Council of the City of Lowell, as follows:

SECTION 1. All Standing committees of the City Council, or of either branch thereof, shall act only in committee meeting duly assembled, and no business other than to adjourn shall be transacted at any committee meeting, unless a majority of the committee shall be actually present.

SECT. 2. As speedily as possible after their appointment, each committee shall organize by the choice of one of their number as secretary, whose duty it shall be to keep a true and accurate record of the doings of his committee in a record-book, to be kept for that purpose; which book, at the expiration of the year, shall be by the secretary deposited either with the city clerk, or the chief executive officer of the department to which the record relates, to be by said city clerk, or said chief executive officer, turned over to the newly appointed committee.

The city solicitor shall keep a docket, giving the names of the parties who have brought actions against the city, or against whom the city has any action pending. He shall also keep another record of cases properly indexed; the name and residence of each witness to be written in said record, and the substance of what said witness will testify to, shall also be inscribed in said book; and, if possible, the same shall be signed by the witness. The docket, record-book, and all briefs shall at the expiration of the city solicitor's term of office, be handed to his successor, and shall be the property of the City of Lowell.

SECT. 3. It shall in general be the duty of each of the standing committees to exercise a close supervision over all matters of detail, relating to their respective departments, coming before them in the regular course; to inform themselves as nearly as may be, and at as early a date after their appointment as possible, as to the amount of appropriation required to properly manage the affairs of their respective departments for the ensuing year, and to cause the same to be reported by written statement, which shall be itemized as closely as practicable to the committee on appropriation, to be by said committee used as a basis from which to make up their annual appropriations, and to approve no bills to be paid from their respective appropriations, save only such as may relate to their respective departments, and have been duly contracted by them or by their authority.

SECT. 4. They may make contracts relating to their respective departments, and shall see to it that in all cases the provisions of Chapter Sixteen of the City Ordinances shall be strictly observed; *provided*, that they shall not by contract incur debts amounting in the aggregate to a larger sum than the unexpended amount of their appropriation for the current year; nor shall any such committee, except the joint standing committee on streets and the standing committee on sewers, make, or authorize the making of, any contracts involving the creation of a debt against the city exceeding two thousand dollars in amount, or if a continuing contract, one which shall extend beyond the municipal year for which said committee may have been appointed, unless they shall have been expressly authorized so to do by resolution, order, or vote of the main body of the council, from which said committee shall have been appointed.

SECT. 5. The direction which, by the terms of Chapter Thirty-five, City Ordinances, the committee on streets is authrized to exercise over the superintendent of streets in the constructing, maintaining, repairing and caring for public streets, ways, and bridges, and the making of contracts for labor and

materials required therein, and in the building of sidewalks, shall be extended as far as to vest in said committee, exclusive of the said superintendent, all matters of detail regarding the purchase of supplies and materials to be used in the building, maintaining, repairing, and taking care of either streets, bridges, or sidewalks, and the purchase, keeping, or caring for any and all property belonging to, or employed in, said department; and said superintendent shall submit to said committee for their approval any contemplated purchase of supplies, material, or property of any kind for said department, the cost of which shall exceed one hundred dollars, and such contract of purchase shall not become binding on the city until duly approved by said committee.

SECT. 6. Said committee on streets shall determine as to the order in which work on the different streets, ways, and sidewalks, whether in constructing or repairing the same, shall be done; when work shall be begun and when stopped; *provided*, that no work of new construction of either streets, bridges, or sidewalks shall be undertaken unless there shall be an unexpended balance to the credit of the appropriation of the department, or unless specially authorized by express vote of the City Council.

SECT. 7. Said committee shall determine as to the number of laborers to be employed in said department, and may, if in their judgment the interest of the department requires it, create or discontinue positions of authority in the department subordinate to that of superintendent; but the direction which the committee shall exercise over the working of the department shall not extend so far as to permit said committee, or any member thereof, directly or personally, to employ or discharge any officer or workman employed therein.

SECT. 8. It shall be the duty of this committee to see to it, by suitable directions given to the said superintendent, that in addition to other ordinary repairs of streets, all sidewalks on public ways, adjoining property of the city, including the side-

walks on such bridges as are public ways, shall be kept clear from ice and snow, and in a reasonably safe and convenient condition for travelling thereon; and the bills incurred in this work shall be paid from the appropriation of the street department.

SECT. 9. Annually, prior to the making of the annual appropriations, said committee shall consider the rate of wages paid to the different grades of employes in the street department, with the view of ascertaining whether the same is just and reasonable, or otherwise; and if, in the judgment of said committee, said rate should be in any particular altered, they shall report thereon, with their recommendations, to the City Council, and said committee may so consider and report on said subject at any other time during the year.

SECT. 10. In ascertaining the powers which the committee on sewers shall exercise in the constructing, maintaining, and repairing of main drains and common sewers, or in contracting for labor or materials to be used therein, the same rule shall be, in all respects, applied as has been hereinbefore laid down with respect to the committee on streets, except that the report to be made annually concerning the rate of wages to be paid to employes on the sewer department, shall be made to the Board of Aldermen instead of to the City Council.

SECT. 11. All contracts for the furnishing of supplies or materials, or for the purchase of any property by the city for use in the police department, to an amount exceeding one hundred dollars, shall be made only by the authority of the committee on police.

SECT. 12. The employing and fixing the pay of whatever help or assistance of a permanent nature may be required in the custody or control of prisoners, the care of the station-house, or the property belonging to the city and used in connection with the police department, other than that afforded by the regular members of the police force, including the police matron, shall be in said committee on police.

SECT. 13. All nominations of persons to serve as police officers and watchmen, whether designated as regular officers, special officers, or supernumeraries, shall, before action thereon by the Board of Aldermen, be referred to the committee on police, to be by them reported back to the Board of Aldermen, with their recommendations, at or before the next regular meeting of said board.

SECT. 14. All petitions for the appointment or removal of police officers or watchmen, whether referring to regular, special, or supernumerary officers, and all charges or matters coming before the Board of Aldermen and specially relating to the members of the police department, or any of them, shall, before any action thereon is taken by the board, be referred to the committee on police, unless such may have already been considered reported by said committee.

SECT. 15. No member of the police force shall be fined or suspended from duty for any definite period, except with the approval (to be indicated by their vote) of said committee on police; *provided*, that the chief of police may, for cause sufficient in his judgment, suspend any police officer until such time as he may cause the said committee to be convened to investigate as to the propriety of such suspension.

SECT. 16. The committee on lands and buildings shall have in general charge the construction and all repairs and the making of all contracts relating to labor and material used in the construction and repairing of all buildings belonging to the city, to whatever department's use said buildings may be especially designed or designated, save only such construction or repairing as the City Council may, by resolution, order, or vote, especially authorize to be let out by contract; or such work in the nature of minor repairs as may be done by persons regularly employed in the department, to whose use such buildings are especially designated.

SECT. 17. Whenever such work, whether in the way of construction of new, or repairs in old, buildings, shall be so done

under the general charge of said committee on lands and buildings, all bills contracted in the same, whether for labor, or materials, or both, shall be paid from said committee's appropriation; *provided*, that by express agreement between said committee and the committee having in charge the department specially benefited by said work, the whole or any part of said bills may be charged to the appropriation of said last-named committee; in which case, bills so charged shall be approved before payment, by both of said committees.

SECT. 18. In ascertaining the powers which the committee on lands and buildings shall exercise in such work of construction or repairs as may be undertaken by them, or in contracting for labor or materials to be used therein, the same rule shall be in all respects applied as has been hereinbefore laid down with respect to the committee on streets.

SECT. 19. All contracts for the furnishing of supplies or materials, or for the purchase or keeping of any property by the city for use in the fire department, to an amount exceeding one hundred dollars, shall be made only by authority of the committee on fire department.

SECT. 20. All contracts of or concerning any of the city printing or advertising, save only such as are by law made subject to the Board of Aldermen exclusively, to whatever department of the city said printing or advertising especially relates, shall be made only under the authority of the committee on printing, and shall be paid for from said committee's appropriation.

[This section shall go into effect on the first Monday of January, 1888.]

SECT. 21. No member of either branch of the City Council shall be eligible to the office of overseer of the poor.

[This section shall take effect on the first Monday of January, 1888.]

SECT. 22. Revised Ordinances, Chap. 1, Sect. 13, is hereby amended as follows, viz.: By striking out the word "Novem-

ber" in the second line, and substituting in place thereof the following words, viz.: "December, and after the annual municipal election shall have been held;" and by inserting between the word "established" and the word "and" in the fifth line, the following words, viz.: "Provided, that in case any new office shall be created, the salary of said newly created office may be fixed at any time."

SECT. 23. No owner, driver, or other person having the care or ordering of a vehicle upon Prescott street, or that part of Merrimack Street between John Street and Bridge Street, or that part of Central Street between Merrimack Street and Market Street, at any time between the hours of eight A. M. and nine P. M., shall suffer the same to stop for more than five minutes without some proper person to take care of the same, nor for more than ten minutes in any case; but the foregoing provisions shall not apply to carriages of physicians while engaged in their business.

SECT. 24. No owner, driver, or other person having the care or ordering of a vehicle upon any public street or way in the city, shall stop or place it at or near the intersection of two or more streets in such a manner as to cross a footway, a flag-stone, or to prevent foot passengers from passing along a street in the direction or line of the footway or flag-stone thereon.

SECT. 25. Every driver of a vehicle upon any public street in the city shall remain near it while it is unemployed or standing, unless he is necessarily absent in the course of his duty and business, and he shall so keep his horse or horses and vehicle as not to obstruct the streets.

SECT. 26. No owner, driver, or other person having the care or ordering of a vehicle, shall hitch or fasten the horse or horses attached thereto, to any street lamp-post upon any of the public ways of the city.

SECT. 27. Any person who shall offend against any of the

provisions of the foregoing sections, from twenty-three to twenty-six, both inclusive, shall be punished for each offense by a fine not exceeding twenty dollars.

In Board of Aldermen, Dec. 30, 1887.

Passed to be ordained.

STEPHEN B. PUFFER, Chairman.

In Common Council, Dec., 30, 1887.

Passed to be ordained.

JAMES H. CARMICHAEL, President.

Approved.

JAMES C. ABBOTT, Mayor.

CITY OF LOWELL.

In the Year Eighteen Hundred and Eighty-eight.

AN ORDINANCE TO AMEND THE ORDINANCE, ENTITLED: "AN ORDINANCE AMENDING THE ORDINANCES OF THE CITY OF LOWELL, AND DEFINING AND LIMITING THE POWERS OF STANDING COMMITTEES."

Be it ordained, by the City Council of the City of Lowell, as follows:

That Sect. 2 of the Ordinance amending the Ordinances of the City of Lowell, and defining and limiting powers of standing committees, be, and the same hereby is, amended as follows: By inserting after the word "committee" and before the word "shall," in the second line, the words "except the joint standing committee on streets and the standing committee on sewers."

In Common Council, Feb. 14, 1888.

Passed to be ordained.

E. B. CONANT, President.

In Board of Aldermen, Feb. 14, 1888.

Passed to be ordained.

A. M. CHADWICK, Chairman.

Approved Feb. 15, 1888.

CHARLES D. PALMER, Mayor.

CITY OF LOWELL.

In the Year Eighteen Hundred and Eighty-eight.

AN ORDINANCE RESTRICTING THE DISTRIBUTION OF HAND BILLS, CIRCULARS, PROGRAMMES, AND ADVERTISING SLIPS.

Be it ordained, by the City Council of the City of Lowell, as follows:

That no person shall cause to be distributed any hand bill, circular, programme, or advertising slip in or upon any street or sidewalk in the city, excepting that such hand bill, circular, programme, or advertising slip may be placed within the doors of stores, offices, and business houses, and at the doors of residences.

Any person who shall offend against any of the provisions of this ordinance, shall be punished for each offense by a fine not exceeding twenty dollars.

In Common Council, July 17, 1888.

Passed to be ordained.

E. B. CONANT, President.

In Board of Aldermen, Aug. 3, 1888.

Passed to be ordained.

A. M. CHADWICK, Chairman.

Approved Aug. 3, 1888.

CHARLES D. PALMER, Mayor.

CITY OF LOWELL.

In the Year Eighteen Hundred and Eighty-eight.

AN ORDINANCE TO AMEND SECTION EIGHT OF CHAPTER TWENTY OF THE REVISED ORDINANCES OF THE CITY OF LOWELL.

Be it ordained, by the City Council of the City of Lowell, as follows:

SECTION 1. That Sect. 8 of Chap. 20 of the Revised Ordinances of the City of Lowell be, and the same is, hereby amended by inserting in the first line thereof, after the word "engineer," and before the word "to," the words "who may appoint some members of the Fire Department to assist him in such duty."

In Common Council, Aug. 16, 1888.

Passed to be ordained.

E. B. CONANT, President.

In the Board of Aldermen, Aug. 21, 1888.

Passed to be ordained.

A. M. CHADWICK, Chairman.

Approved Aug. 21, 1888.

CHARLES D. PALMER, Mayor.

CITY OF LOWELL.

In the Year Eighteen Hundred and Eighth-eight.

AN ORDINANCE PROHIBITING THE THROWING OF FRUIT, VEGETABLES, ETC., ON SIDEWALKS OR CROSSWALKS.

Be it ordained, by the City Council of the City of Lowell, as fallows:

SECTION 1. Any person who shall cast, throw, place or deposit on any sidewalk or crosswalk in any street, avenue, or public place within the corporate limits of the City of Lowell, any part or portion of any fruit or vegetable or other substance, which, when stepped upon by any person, is liable to cause, or does cause, such person to slip or fall, shall be punished by a fine not exceeding twenty dollars.

SECT. 2. The proprietor of every store or other place where fruit, vegetables, or other substances mentioned in the preceeding section of this ordinance are sold, or kept for sale, shall keep suspended therein or posted thereon in some conspicuous place, constantly, a copy of sections one and two of this ordinance, printed in large type, so that persons purchasing any such fruit, vegetable, or other substances may become aware of their provisions, and every proprietor refusing or neglecting to comply with the provisions of this section shall be fined not exceeding twenty dollars.

In Common Council, Aug. 16, 1888.

Passed to be ordained.

E. B. CONANT, President.

In Board of Aldermen, Aug. 21, 1888.

Passed to be ordained.

A. M. CHADWICK, Chairman.

Approved Aug. 21, 1888.

CHARLES D. PALMER, Mayor.

CITY OF LOWELL.

In the Year Eighthen Hundred and Eighty-eight.

AN ORDINANCE TO AUTHORIZE THE NEW ENGLAND TELEPHONE AND TELEGRAPH COMPANY OF MASSACHUSETTS, ITS SUCCESSORS AND ASSINGS, TO LAY AND MAINTAIN UNDERGROUND CONDUITS, CABLES, WIRES, AND MANHOLES, AND TO ERECT AND MAINTAIN DISTRIBUTING POLES.

Be it ordained, by the City Council of the City of Lowell, as follows:

SECTION 1. The New England Telephone and Telegraph Company of Massachusetts, its successors and assigns, are hereby authorized to construct and maintain underground conduits, cables and wires for the conduct of its business in the following streets: Middle Street, Market Street, Central Street, from Merrimack to Tower's Corner, and Middlesex Street, from Tower's Corner to Thorndike Street, to construct therein and maintain the necessary manholes and house connections; also to erect and maintain distributing poles at the termini of such said conduits, and at suitable distributing points; all work to be done in accordance with the regulations hereinafter provided.

SECT. 2. The said company shall lay conduits in any other street or streets which may be hereafter designated by the Board of Aldermen, and in which street or streets said company maintains or wishes to maintain electric cables or lines of wire, to the number of 100 or more conductors, and within which said streets the Board of Aldermen may deem it for the interest of the city to have said wires placed underground, and within such reasonable time in each case as the Board of Aldermen shall determine.

Wires to the number of 50 or more in any street shall be placed in aerial cable, if so ordered by the Board of Aldermen.

SECT. 3. The said conduits shall be of suitable kind and

construction, such as are in successful operation for similar purpose in other cities, and the work shall be done in a thorough manner, and to the approval of the Board of Aldermen, or any officer of the city whom the Board may select. The said distributing and other poles shall be of such height and other dimensions, and of such form and material, as shall be satisfactory to the Board of Aldermen, and shall be subject to their approval or the approval of any person or persons whom the Board of Aldermen may select.

SECT. 4. The surface of a street shall not be disturbed for the purpose of laying, repairing, or removing wires or conduits, or erecting or removing distributing or other poles, without a permit from the Board of Aldermen indicating the time, manner, and place of opening such street, and the time within which such work shall be completed.

But this provision shall not be construed as requiring any permit for the opening of manholes for the purpose of drawing in, removing, or repairing wires and cables.

SECT. 5. When an opening is made in a street for any of the purposes aforesaid, the portion of the street so opened shall be restored to a condition satisfactory to the City Engineer and Surveyors of Highways, and shall be kept in such condition for one year thereafter, and if not so restored and maintained by said company said Surveyors of Highways may cause the same to be done at the expense of said company.

SECT. 6. The said company, in laying, repairing, or removing its wires or conduits, shall not disturb or in any way interfere with any gas or water pipes, or sewers, or pipes therewith connected.

SECT. 7. In case the City of Lowell hereafter finds it necessary to construct or enlarge sewers or other public works in streets where conduits are laid, which shall require the removal or changing the location of said conduit, said removing or changing shall be at the expense of said company.

SECT. 8. The said company shall commence the work contemplated herein within six months from the passage of this ordinance, unless restrained by process of law, and shall continue the said work with reasonable diligence until suitable conduits have been laid in such of the above named streets as said parties may elect, or the Board of Aldermen may require under the provisions of Section 2.

SECT. 9. The said company shall not remove its conduits unless permitted to do so by the Board of Aldermen.

SECT. 10. The said company shall remove its conduits to other suitable locations whenever ordered to do so by the Board of Aldermen.

SECT. 11. No permit shall be granted, or, if granted, shall be valid, to disturb the surface of a street for any of the purposes aforesaid until said company has executed an agreement in a form satisfactory to the City Solicitor, providing,

First: That in every underground conduit constructed by the company sufficient and necessary space shall be reserved, free of expense, for the use of the fire, police, and other signal wires belonging to the city, and used exclusively for municipal purposes, and that the fire and police department, by their electrical superintendent, shall be allowed access to said conduits at all times, and that said department shall be allowed facilities and privileges in putting in or taking out wires equal in all respects to those of the said Telephone and Telegraph Company.

Second: That said company will indemnify and save the city harmless against all damages, costs, and expense whatsoever to which the city may be subjected in consequence of the acts or neglects of said company, its agents, or servants, or in any manner arising from the rights and privileges granted it by the city.

Third: In addition to the aforesaid agreement, said company shall, before a street is disturbed for the laying of its wires or conduits, execute a bond, with surety or sureties in

a penal sum of not less than $10,000, conditioned to fulfil all its said agreements with the city and its duties under this ordinance, and a new bond of like import may at any time be required of said company by the City Council, which new bond shall be a strengthening bond, unless the surety or sureties on former bonds are expressly released from further liability by vote of the City Council.

In Common Council, Dec. 31, 1888.

Passed to be ordained.

E. B. CONANT, President.

In Board of Aldermen, Jan. 4, 1889.

Passed to be ordained.

A. M. CHADWICK, Chairman.

Approved Jan. 4, 1889.

CHARLES D. PALMER, Mayor.

CITY OF LOWELL.

In the Year Eighteen Hundred and Eighty-eight.

AN ORDINANCE AMENDING CHAPTER THIRTY-NINE OF THE REVISED ORDINANCES.

SECTION 1. Section 1 of Chap. 39 of the City Ordinances is hereby amended so as to read as follows:

SECT. 1. The members of the Lowell Water Board shall be five in number, and shall be chosen in the manner following: In the month of January or February next, there shall be chosen by concurrent vote of both branches of the City Council, three citizens of Lowell, neither of whom shall hold any other municipal office, to be members of said Water Board, one of whom shall hold office for four years and one for three years from the second Monday of March next following their election; and one to hold office from the first Monday of May next following his election until the second Monday in March in the year 1891, or until their successors are chosen.

In the month of January or February in the year 1890 there shall be chosen by concurrent vote of both branches of the City Council, one citizen of Lowell, who shall hold no other municipal office, to be a member of said Water Board, to serve from the first Monday of May next following his election until the second Monday of March in the year 1894, or until his successor is chosen; and in the month of January or February in the year 1891, and annually thereafter, there shall be chosen, in the manner above provided, one citizen of Lowell, who shall hold no other municipal office, to be a member of said Water Board, to serve for the term of four years from the second Monday of March next following his election, or until his successor is chosen. In the month of January next, and

annually thereafter in said month, there shall be chosen by concurrent vote of both branches of the City Council, one member of the Board of Aldermen to be a member of said Water Board, and who shall enter upon his duties as member of said Board forthwith, and hold office during the remainder of the municipal year in which he is elected, or until his successor is elected.

The members elected to said Board from the Board of Aldermen and the citizens at large, shall at all times be subject to removal by the City Council. The acceptance of any other municipal office by a member of said Board shall be deemed to constitute a vacancy in said Board. Vacancies for any cause may be filled at any time by the City Council.

SECT. 2. Sect. 2 of the said Chap. 39 is hereby amended so as to read as follows:

SECT. 2. On the second Monday of March, in the year 1889, the members of the said Water Board shall meet and organize by choosing one of their number, elected from the citizens, to be president of the Water Board, whose term of office shall be from the first Monday of May in said year until the second Monday of March, 1890, or until his successor is chosen.

And on the second Monday of March, 1890, and annually thereafter, the members of said Water Board shall meet and organize by choosing one of their number, elected from the citizens, to be president of the Board, who shall hold his office for one year from the time of his election, or until his successor is chosen. He shall receive such compensation for his services as president as the City Council may from time to time determine. They shall, in the month of March, annually, choose a superintendent of Water Works, who shall hold his office from April first, in the year of his election, until another is elected in his place, unless sooner removed. He shall receive such compensation as superintendent as the City Council may from time to time determine. They shall, in the month of June, annually, choose a clerk, who shall also be secretary of

the Board, and who shall hold his office for one year, or until his successor is chosen. The superintendent and clerk may for cause be removed at any time by the Board. Neither the superintendent nor the clerk shall be members of the Water Board. Said Board may also make such rules and regulations for their own government and for the government of all subordinate officers, by them appointed, as they may deem expedient, not inconsistent with the Statute Law or City Ordinances.

SECT. 3. This ordinance shall take effect upon its passage, and all ordinances, or parts of ordinances, inconsistent therewith are hereby repealed.

In Common Council, Jan. 4, 1889.

Passed to be ordained.

E. B. CONANT, President.

In Board of Aldermen, Jan. 4, 1889.

Passed to be ordained.

A. M. CHADWICK, Chairman.

Approved Jan. 4, 1889.

CHARLES D. PALMER, Mayor.

CITY OF LOWELL.

In the Year Eighteen Hundred and Eighty-nine.

AN ORDINANCE AMENDING AN ORDINANCE AMENDING CHAPTER THIRTY-NINE OF THE REVISED ORDINANCES.

Be it ordained, by the City Council of the City of Lowell, as follows:

That the ordinance amending Chap. 39 of the Revised Ordinances be, and the same hereby is, amended as follows: By striking out the word "next" in the twenty-eighth line and inserting in place thereof the words and figures "or February, 1889," and by striking out the word "month" in the twenty-ninth line and inserting the word "months" in place thereof.

In Common Council, Feb. 19, 1889.

Passed to be ordained.

THOMAS J. SPARKS, President *pro tem.*

In Board of Aldermen, Feb. 19, 1889.

Passed to be ordained.

R. M. BOUTWELL, Chairman.

Approved, Feb. 19, 1889.

CHARLES D. PALMER, Mayor.

CITY OF LOWELL.

In the Year Eighteen Hundred and Eighty-nine.

AN ORDINANCE RELATING TO CHAPTER TWENTY, SECTION ONE, OF THE REVISED ORDINANCES.

Be it ordained, by the City Council of the City of Lowell, as follows:

SECTION 1. Sect. 1 of Chap. 20 of the City Ordinances is hereby ordained to read as follows:

SECT. 1. The Fire Department shall consist of a Chief Engineer, four Assistant Engineers, and as many engine-men, hose-men, hook and ladder men, and other persons, to be divided into companies, as the number of engines and the other fire apparatus of the city shall from time to time require; the Chief Engineer shall be appointed by the Mayor and Aldermen, in the month of March or April, and whenever a vacancy occurs, and he shall enter upon the discharge of the duties of said office on the first day of May of the year in which appointed, if appointed for a full term prior to May of any year, and he shall hold said office for the term of three years from said first day of May, or until he is removed; and if appointed after the first day of May of any year he shall enter upon the discharge of the duties of said office forthwith, and shall continue therein until the expiration of the full term as existing at the time of his said appointment, or until removed; and the appointment of said Assistant Engineers shall be made by the Mayor and Aldermen in the month of March or April, annually, and whenever a vacancy occurs; and they shall hold their respective offices for the term of one year from the first day of May succeeding their appointment, or until others are chosen; all other members of the Fire Department shall be nominated by the Board of Engineers, and their names sent to the Mayor and Aldermen, and when by them appointed they

shall be members of the Fire Department; *provided*, that vacancies may be filled at any time, and that the Mayor and Aldermen may at any time remove any or all of said officers or members; except that the Chief Engineer shall not be removed without a hearing and cause shown thereat. No person shall be appointed a member of the Fire Department who does not sustain a good moral character, and who is not a citizen of the City of Lowell.

SECT. 2. This ordinance shall take effect upon its passage, and Sect. 1 of Chap. 20 of the City ordinances, together with each and every amendment thereto, is hereby repealed.

In Common Council, June 11, 1889.

Passed to be ordained.

WILLIAM H. WESTALL, President.

In Board of Aldermen, June 14, 1889.

Passed to be ordained.

JOHN H. FULLER, Chairman *pro tem.*

Approved June 22, 1889.

CHARLES D. PALMER, Mayor.

CITY OF LOWELL.

In the Year Eighteen Hundred and Eighty-nine.

AN ORDINANCE AMENDING CHAPTER ONE OF THE REVISED ORDINANCES.

Be it ordained, by the City Council of the City of Lowell, as follows:

That Sect. 6 of Chap. 1 of the Revised Ordinances be, and the same is, hereby amended by striking out after the word "and" in the eleventh line the words "one member of the Lowell Water Board elected from the Common Council," and inserting instead thereof the words "the Joint Standing Committee on Commons."

In Common Council, Jan. 3, 1890.

Passed to be ordained.

THOMAS J. SPARKS, President *pro tem.*

In Board of Aldermen, Jan. 3, 1890.

Passed to be ordained.

R. M. BOUTWELL, Chairman.

Approved Jan. 3, 1890.

CHARLES D. PALMER, Mayor.

CITY OF LOWELL.

In the Year Eighteen Hundred and Ninety.

AN ORDINANCE AMENDING CHAPTER FIVE OF THE ORDINANCES OF THE CITY OF LOWELL.

Be it ordained, by the City Council of the City of Lowell, as follows :

That Sect. 12 of Chap. 5 of the Ordinances of the City of Lowell be, and the same hereby is, amended as follows, to wit: By inserting after the word "street," and before the word "provided," in the eleventh line of said section, the words "nor on either side of Bridge Street north of Merrimack River, south of Seventh or West Sixth Streets for a distance of seventy-five feet back from either line of said Bridge Street."

In Common Council, Jan. 3, 1890.

Passed to be ordained.

THOMAS J. SPARKS, President *pro tem.*

In Board of Aldermen, Jan. 3, 1890.

Passed to be ordained.

R. M. BOUTWELL, Chairman.

Approved Jan. 3, 1890.

CHARLES D. PALMER, Mayor.

CITY OF LOWELL.

In the Year Eighteen Hundred and Ninety.

An Ordinance Providing for the Election of Assessors and the Appointment of Assistant Assessors.

Be it ordained, by the City Council of the City of Lowell, as follows:

Section 1. There shall be chosen by concurrent vote of both branches of the City Council, in the month of April, May, or June of the current year, three assessors, one to serve for a term beginning with the date of his election, and ending the first Monday of January, 1893, one to serve for a term beginning at the date of his election, and ending the first Monday in January, 1892, and one to serve for a term beginning at the date of his election, and ending the first Monday of January, 1891; and in the month of January or February, 1891, and in each succeeding year thereafter, there shall be elected one assessor, to serve for the term of three years from the first Monday in January of the year in which he is chosen. In case of a vacancy in the Board of Assessors from any cause, the City Council shall fill said vacancy by electing a member to serve for the remainder of the unexpired term.

Sect. 2. In the month of April, May, or June of the current year there shall be nominated by the Mayor, and confirmed by the Board of Aldermen, one assistant assessor from each ward (said assistant assessor to be a resident therein), to serve for the remainder of the current year, and in the month of January or February in the year 1891, and in every second year thereafter, there shall be nominated by the Mayor, and confirmed by the Board of Aldermen, one assistant assessor from each ward (said assistant assessor to be a resident therein), to serve for the term of two years from the first Monday in January of the year in which they are appointed. In

case of a vacancy occurring in the Board of Assistant Assessors, these shall be nominated by the Mayor, and confirmed by the Board of Aldermen, a member to serve for the remainder of the unexpired term. Said assistant assessors shall assist the assessors in the assessment of taxes, and in any duties relating to said assessment, and shall at all times act under the direction and control of the assessors.

Said assessors and assistant assessors to be sworn to a faithful performance of their duties.

Said assessors shall be removable at the pleasure of the City Council, and said assistant assessors at the pleasure of the Board of Aldermen.

SECT. 3. Section 1 of Chapter 3 of the charter and ordinances, and all ordinances and parts of ordinances inconsistent with this ordinance, are hereby repealed.

In Common Council, April 22, 1890.

Passed to be ordained.

ALONZO G. WALSH, President.

In Board of Aldermen, April 29, 1890.

Passed to be ordained.

JOHN H. FULLER, Chairman.

Approved May 1, 1890.

CHARLES D. PALMER, Mayor.

CITY OF LOWELL.

In the Year Eighteen Hundred and Ninety.

AN ORDINANCE AMENDING CHAPTER THIRTY-THREE OF THE ORDINANCES OF THE CITY OF LOWELL.

Be it ordained, by the City Council of the City of Lowell, as follows:

That Section 15 of Chapter 33 of the Ordinances of the City of Lowell be, and the same hereby is, amended by striking out the words "Board of Aldermen" wherever they occur and inserting instead thereof the words "Superintendent of Streets."

In Common Council, May 20, 1890.

Passed to be ordained.

ALONZO G. WALSH, President.

In Board of Aldermen, May 27, 1890.

Passed to be ordained.

JOHN H. FULLER, Chairman.

Approved June 2, 1890.

CHARLES D. PALMER, Mayor.

CITY OF LOWELL.

In the Year Eighteen Hundred and Ninety-one.

AN ORDINANCE EXTENDING THE LIMITS OF THE FIRE DISTRICT OF THE CITY OF LOWELL.

Be it ordained, by the City Council of the City of Lowell, as follows:

That the limits of the Fire District of the City of Lowell be, and the same are hereby extended, as follows: Beginning at the junction of the middle line of Appleton Street with the middle line of South Street, thence southerly along the middle line of South Street to the middle line of Summer Street, thence easterly along the middle of Summer and Charles Streets to the middle line of Central Street, then northerly along the middle line of Central Street to Appleton Street, thence westerly along the middle line of Appleton Street to the point of beginning.

In Common Council, May 12, 1891.

Passed to be ordained.

THOMAS J. SPARKS, President.

In Board of Aldermen, May 19, 1891.

Passed to be ordained.

JEREMIAH CROWLEY, Chairman.

Approved June 8, 1891.

GEORGE W. FIFIELD, Mayor.

CITY OF LOWELL.

In the Year Eighteen Hundred and Ninety-one.

AN ORDINANCE REPEALING SECTION SIX OF CHAPTER NINE OF THE REVISED ORDINANCES OF 1883.

Be it ordained, by the City Council of the City of Lowell, as follows :

That Section 6 of Chapter 9 of the Revised Ordinances of 1883 be, and the same hereby is, repealed.

In Common Council, May 12, 1891.

Passed to be ordained.

THOMAS J. SPARKS, President.

In Board of Aldermen, May 19, 1891.

Passed to be ordained.

JEREMIAH CROWLEY, Chairman.

Approved June 8, 1891.

GEORGE W. FIFIELD, Mayor.

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SIXTY-FIFTH

ANNUAL REPORT

OF THE

SCHOOL COMMITTEE

OF LOWELL, MASS.,

TOGETHER WITH THE

TWENTY-SEVENTH ANNUAL REPORT

OF THE

SUPERINTENDENT OF PUBLIC SCHOOLS,

REPORTS OF EVENING SCHOOLS, MUSIC, AND AN APPENDIX.

1890.



LOWELL, MASS.
MORNING MAIL PRINT: NO. 147 CENTRAL STREET.
1891.

CITY OF LOWELL.

OFFICE OF THE SCHOOL COMMITTEE,
LOWELL, MASS., December 31, 1890.

At a meeting of the School Committee held December 29, 1890, it was unanimously voted that the Committee on Reports of the School Committee, other Standing Committees, and the Superintendent of Schools have leave to print their annual reports for the year 1890.

In accordance therewith, the reports of Evening Schools and Music are hereby submitted.

GEO. F. LAWTON, *Secretary.*

ORGANIZATION

OF THE

SCHOOL COMMITTEE,

1890.

CHARLES D. PALMER, Chairman.
ANDREW G. SWAPP, Vice Chairman.
GEORGE F. LAWTON, Secretary.

MEMBERS OF THE SCHOOL COMMITTEE.

CHARLES D. PALMER, Mayor, ... } *Ex Officiis*
ALONZO G. WALSH, President of Common Council, . } *Ex Officiis*

Ward 1.—PATRICK KEYES, JR., ...	Term	Expires	1890
LAWRENCE CUMMINGS, . . .	"	"	1891
" 2.—*GUSTAVUS A. GERRY, ...	"	"	1890
GREENLEAF C. BROCK, . . .	"	"	1891
" 3.—JOHN W. McEVOY, ...	"	"	1890
GEORGE M. HARRIGAN, . . .	"	"	1891
" 4.—RANSOM A. GREENE, ...	"	"	1890
FRED WOODIES, ...	"	"	1891
" 5.—ANDREW G. SWAPP, ...	"	"	1890
WALTER COBURN, ...	"	"	1891
" 6.—ALBERT G. THOMPSON, . . .	"	"	1890
†CLARENCE E. BURNHAM, . .	"	"	1891

*Deceased October 24, 1890. Dr. C. F. Harris, elected to fill vacancy, November 6, 1890.
†Resigned July 21. Dr. A. W. Hill elected to fill vacancy, September 11, 1890.

STANDING COMMITTEES.

On Accounts.—The Mayor, Messrs. Woodies, Harrigan, Swapp, Keyes.

On School Houses and Hygiene.—Messrs. Cummings, Gerry, McEvoy, Greene, Thompson.

On Teachers and Training School.—Messrs. Gerry, Greene, Coburn, Brock, Harrigan.

On Reports and Printing.—Messrs. Burnham, Gerry, McEvoy, Thompson, Cummings.

On Books and Supplies.—Messrs. Swapp, Brock, Keyes, Thompson, Woodies, Harrigan.

On Salaries.—The Mayor, Messrs. Gerry, Cummings, Coburn, Keyes.

On Penmanship and Drawing.—Messrs. Woodies, Coburn, Gerry, Burnham, McEvoy.

On Music.—Messrs. Burnham, Greene, Brock, Harrigan, Swapp.

On Evening Schools.—Messrs. Thompson, Greene, Cummings, Swapp, Burnham.

On Rules and Regulations.—Messrs. Coburn, Woodies, Swapp, Harrigan, McEvoy.

On Military Instruction.—Messrs. Brock, Coburn, Thompson, Cummings, Keyes.

On Private Schools.—The Mayor, Messrs. Brock, Burnham, McEvoy, Keyes.

ASSIGNMENT OF SCHOOLS.

The Mayor.—Reform School.

Mr. Walsh.—Reform and Middlesex Village.

Mr. Cummings.—High, Green, Morrill.

Mr. Keyes.—High, Reform, Cottage Street, Chapel, Cheever and Worthen Streets.

Mr. Brock.—High, Kirk Street, West Sixth Street, Tenth Street, River Street.

Dr. Gerry.—High, Varnum and Fourth Street.

Mr. Harrigan.—High, Butler, Agawam Street, Lyon Street.

Mr. McEvoy.—London Street, Carter Street, Ames Street, Weed Street.

Mr. Woodies.—Highland, Franklin, Howard Street, Grand Street.

Mr. Greene.—High, Edson, Eliot, Dover Street.

Mr. Coburn.—High, Pawtucket, Mammoth Road, Rock Street, Plain Street, Powell Street, Varnum Avenue.

Mr. Swapp.—Bartlett, Cabot Street, School Street.

Mr. Burnham.—Colburn, High Street, Central Street.

Mr. Thompson.—High, Moody, Fayette Street, Charles Street, Pond Street.

High School.—Messrs. Coburn, Cummings, Keyes, Brock, Gerry, Harrigan, Greene, Thompson.

GEORGE F. LAWTON, Superintendent of Public Schools.
Office in City Government Building.

OFFICE HOURS. — One hour after the forenoon session of the schools, and from 2 to 3 o'clock on Saturday afternoon.

JOHN A. SMITH, Supervisor of Evening Schools.

TRUANT COMMISSIONERS.

BICKFORD LANG. JAMES KELLY. JOHN F. WILLIAMS.
Office in City Government Building.

ORGANIZATION

OF THE

SCHOOL COMMITTEE,

1891.

GEORGE W. FIFIELD, Chairman.
WALTER COBURN, Vice Chairman.
GEORGE F. LAWTON, Secretary.

MEMBERS OF THE SCHOOL COMMITTEE.

GEORGE W. FIFIELD, Mayor, ... } *Ex Officiis*
THOMAS J. SPARKS, President of Common Council . }

Ward 1.—LAWRENCE CUMMINGS, . . .	Term Expires	1891
PATRICK KEYES, JR., ...	" "	1892
" 2.—GREENLEAF C. BROCK, . . .	" "	1891
WILLIAM H. LATHROP, ...	" "	1892
" 3.—GEORGE M. HARRIGAN, . . .	" "	1891
JOHN W. McEVOY, ...	" "	1892
" 4.—FRED WOODIES, ...	" "	1891
RANSOM A. GREENE, ...	" "	1892
" 5.—WALTER COBURN, ...	" "	1891
ANDREW G. SWAPP, ...	" "	1892
" 6.—LEONARD HUNTRESS, ...	" "	1891
ALMON W. HILL, ...	" "	1892

STANDING COMMITTEES.

On Accounts.—The Mayor, Messrs. Woodies, Harrigan, Swapp, Keyes.

On School Houses and Hygiene.—Messrs. Cummings, McEvoy, Huntress, Hill, Lathrop.

On Teachers and Training School.—Messrs. Brock, Greene, Coburn, Harrigan, Huntress.

On Reports and Printing.—Messrs. McEvoy, Huntress, Brock, Greene, Lathrop.

On Books and Supplies.—Messrs. Swapp, Woodies, Harrigan. Hill, McEvoy, Lathrop.

On Salaries.—The Mayor, Messrs. Brock. Cummings, Coburn, Keyes.

On Penmanship and Drawing.—Messrs. Woodies, Coburn, McEvoy, Hill, Keyes.

On Music.—Messrs. Harrigan, Swapp, Greene, Lathrop, Cummings.

On Evening Schools.—Messrs. Greene, Cummings, Swapp, Hill, Keyes.

On Rules and Regulations.—Messrs. Coburn, Woodies, Swapp, Harrigan, McEvoy.

On Military Instruction.—Messrs. Hill, Coburn, Cummings, Keyes, Lathrop.

On Private Schools.—The Mayor, Messrs. Brock, McEvoy, Keyes, Huntress.

On Sewing.—Messrs. Keyes, Woodies, Harrigan, Huntress, Greene.

ASSIGNMENT OF SCHOOLS.

The Mayor.—Reform School.

Mr. Sparks.—Reform and Middlesex Village.

Mr. Cummings.—High, Greene, Morrill.

Mr. Keyes.—High, Reform, Cottage Street, Chapel, Cheever and Worthen Streets.

Dr. Lathrop.—Kirk Street, West Sixth Street, Tenth Street, River Street.

Mr. Brock.—High, Varnum and Fourth Street.

Mr. Harrigan.—High, Butler, Agawam Street, Lyon Street.

Mr. McEvoy.—London Street, Carter Street, Ames Street, Weed Street.

Mr. Woodies.—Highland, Franklin, Howard Street, Grand Street.

Mr. Greene.—High, Edson, Eliot, Dover Street.

Mr. Coburn.—High, Pawtucket, Mammoth Road, Cross Street, Plain Street, Varnum Avenue.

Mr. Swapp.—High, Bartlett, Cabot Street, School Street.

Dr. Huntress.—Colburn, High Street, Pond Street.

Dr. Hill.—High, Moody, Fayette Street, Charles Street, Central Street.

High School.—Messrs. Coburn, Cummings, Keyes, Brock, Harrigan, Greene, Swapp, Hill.

GEORGE F. LAWTON, Superintendent of Public Schools.
Office in City Government Building.

OFFICE HOURS. — One hour after the forenoon session of the schools, and from 2 to 3 o'clock on Saturday afternoons.

JOHN A. SMITH, Supervisor of Evening Schools.

TRUANT COMMISSIONERS.

BICKFORD LANG. JAMES KELLY. JOHN F. WILLIAMS.
Office in City Government Building.

REPORTS.

REPORT OF THE SCHOOL COMMITTEE.

In presenting the Report of the Committee on Reports, in accordance with the requirements of the Statutes and a long established custom, your Committee feel that any elaborate discussion of our school system would be unnecessary and at the same time intrench to some extent on ground that might be better trod by our Superintendent in his report.

To the practical School Committee man of to-day, the subject which presents itself most prominently is the need of sufficient school buildings, well kept and well ventilated. In no place is this more apparent than in our own city, where we have not only a woeful deficiency of school-rooms, but in several instances buildings that have been condemned, in these reports and elsewhere, year after year.

The removal of all control over janitors in our schools is also a source of annoyance, if not a positive detriment, to the general order and harmony of its sessions. The efforts of the School Committee

of Lowell to transfer the management and control of school buildings from the City Council to itself have not been successful, yet the continued agitation of the subject, both in and out of the Legislature, may in the near future bring about this most desirable of changes. In presenting our report we were so impressed with the importance of this matter as to enter at once upon its treatment, regarding the general comfort and convenience of the scholars as paramount.

To dwell upon the urgent need of a new High School building would seem to be superfluous. Its condition is, and has been for years past, deplorable. Compelled by law to maintain the school, we do so at considerable outlay for current expenses, while we fail to receive adequate returns, from its cramped and unhealthy conditions. Teachers, parents, scholars and School Board complain, but the building and school still remains, notwithstanding its wholly inadequate condition, its imperfect results, and, as is quite often the case, sickness among scholars and teachers has been attributed to the wretched state of affairs. Last fall it was found necessary to separate the scholars and transfer a large number to the Worthen Street building, and this, with the lack of hall room, necessitating the use of the hall

on the upper floor of the Green School building for the young ladies of the school, together with the delay and inconvenience occasioned by the boys marching from the school to the Armory on Market Street, serve to illustrate the imperative need of utilizing at once the loan for a new High School building, authorized by the Legislature of the present year. To impede its immediate erection, by any hostility to the present site unanimously recommended by the board, is to be deplored.

The Moody School building is, and has been for many years, inadequate for its requirements, a new building being an imperative and immediate necessity. The crowded condition of the present one, with its unsuitable location, dilapidated and hygienic conditions, render it not only injurious to health, but a drawback to the efficiency of the school. But few people outside of the former and present pupils are aware of the wretched condition of the rooms in which the children are required to spend school hours. The hygienic conditions are in a very bad state, and while this has been remedied to a certain extent, the narrow halls, crowded rooms, without suitable ventilation, render it unfit for school purposes.

The want of yard room is another serious

drawback, necessitating the children to spend their recess on the public street. This, Mr. Greene, the principal, has remedied to a degree by keeping the children on the less traveled thoroughfare, Bartlett Street. The heating, also, is in a dilapidated condition and entirely inadequate to heat the building with its many cracks and crevices through which the cold air has free access. A new boiler will be an imperative necessity the coming year. Two years ago the citizens of Ward Six presented a petition to the Common Council asking a loan for the construction of a new building, but as yet nothing has been done in that direction. It is earnestly hoped that the Committee will urge the necessity and do their utmost to remedy this evil.

The efficiency shown by the pupils in all the schools in penmanship, drawing and music, reflects much credit on the special instructors in these branches.

The Evening Schools during the past year have been fully as successful, if not more so, than at any previous time. The attendance has been larger, especially at the High School, than in former years, and the discipline such as to commend itself to those interested in educational work. The public school system would be incomplete without them,

and every effort is made to bring them to as high a standard as possible; all privileges extended to the Day School system being likewise extended to them. We have been fortunate in having so abled a corp of teachers, who are thoroughly qualified to fill their positions and perform their duties with that earnestness and zeal so essential to success. The supervisor, from his long continued connection with the school system and his earnestness shown in his duties, is deserving of much praise.

Gentlemen, your Committee, in concluding its report, would leave a void were it to overlook the faithful and painstaking work of the Superintendent. He has been at all times active in the performance of his duties, fertile and practical in suggestions. Nor should we neglect here to render a just tribute to the principal of the Training School. Though the school and its principal have been exposed to extended and not always charitable or intelligent criticisms, yet she has persevered in her arduous labors and efforts to make the school all its promotors intended it to be.

With these few suggestions, and calling your attention to the Report of Superintendent Lawton, particularly, with reference to the death of our late member, Dr. G. A. Gerry, we close, hoping that as

years roll around our school system shall so shape and perfect itself as to be second to none among the cities and towns of the state and country.

ALMON W. HILL,
JOHN W. McEVOY,
ALBERT G. THOMPSON,
LAWRENCE CUMMINGS.

REPORT OF EVENING SCHOOLS.

To the School Committee:

GENTLEMEN: — I have the honor to herewith present my report for the year 1890.

The schools opened for the term of 1889–90 on Monday, October 21, 1889, and continued until February 28, 1890, when they were closed, after a very successful term of twenty weeks.

HIGH SCHOOL.

The interest manifested by the scholars in the Evening High School as to attendance and application to their studies has been particularly noticeable. They come to work, and they do work. The percentage of attendance is necessarily lower than that of the day schools, but for the past few years it has averaged over 80 per cent. each term. This showing is all the more creditable when we consider the fact that scholars are not compelled to attend, but are induced to do so only by extending to them first-class instruction.

ELEMENTARY SCHOOLS.

The number in attendance, while showing an increase over former years, was greatly reduced owing to sickness caused by the prevailing epidemics, "La Grippe" and typhoid fever. The falling off in the attendance in some of the schools being such as to hardly warrant keeping them open; in such cases, the classes were consolidated, and some of the teachers dismissed.

Another drawback to the regular attendance of pupils is the lack of co-operation on the part of mill overseers. This

evil having been brought to the attention of the Committee it is to be hoped the abuse will be corrected before the opening of another term.

Overseers and the public generally should ere this have learned that the present composition of the manufacturing and industrial communities of the Commonwealth renders it imperative that evening instruction shall be furnished for the many, who from necessity have been unable to secure more than the merest rudiments of an education in our day schools, and perhaps not even so much as that if they come to us from other countries, thereby adding to the number who are classed as illiterate. Though we cannot expect to do away entirely with illiteracy, we should endeavor to keep it as near the minimum as possible. There is no other means by which we can strike so closely at the root of that particular phase of the illiteracy, which exists in such cities as Lowell and other manufacturing centres, as by compulsory attendance at an evening school.

I again recommend that none but experienced teachers be employed in this department of our school system. Care should be taken in the selection of teachers. It is hardly just to make these schools an experimental field for novices in teaching. The young men and women who are willing, after a day of toil, to give their evenings to improving themselves intellectually, should have all the incentives that competent instructors can supply.

I desire to express my thanks to the members of the School Board for their generous co-operation in all our efforts to advance the interests of the schools, also to Supt. Geo. F. Lawton, who by counsel and advice has been ready always to assist me. The following summary gives the attendance for the term ending February 28, 1890.

SUMMARY FOR THE TERM OF 1889–90.

SCHOOLS.	Number of Teachers at beginning of term.	Number of Teachers at close of term.	Evenings taught.	Whole number of pupils on time-book during the term.			Average number of pupils belonging to the school.			Average Attendance.			Per cent. of attendance.
				Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	
High . .	13	13	72	319	276	595	149	135	284	138	125	263	.92
Bartlett .	17	16	74		410	410		290	290		259	259	.89
Butler .	8	6	74	178	87	265	94	49	143	74	34	108	.75
Colburn .	7	4	74	178	59	237	81	39	120	63	32	95	.79
Franklin	10	8	74	186	101	287	98	56	154	78	38	116	.76
Green .	21	23	74	550		550	392		392	369		369	.94
Moody .	10	10	74	198	131	329	106	87	193	85	70	155	.80
Varnum	4	3	74	116	42	158	64	27	91	43	21	64	.70
Worth'n St	5	6	74		284	284		132	132		109	109	.82
	95	89		1725	1390	3115	984	815	1799	850	688	1538	.82

EXPENSES FOR THE YEAR 1890.

Paid to teachers	$11,726 50
to janitors	1,434 50
for lighting	1,109 24
for incidentals	729 76
for Aiken Avenue School	1,698 35
	$16,698 35

Respectfully submitted,

JOHN A. SMITH, *Supervisor.*

REPORT OF THE SUPERINTENDENT.

OFFICE OF THE SUPERINTENDENT OF SCHOOLS,
December 31, 1890.

Gentlemen of the School Committee:

In accordance with your rules, I have the honor to submit the following report for the year 1890. I first direct your attention to the statistical and financial summary.

SUMMARY OF STATISTICS.

Value of real and personal property	$62,353,612
Population	77,605
Number of polls	20,028
Increase for the year	680
Number of children in the city between five and fifteen years of age, May 1, 1890	12,817
Ward One, 1,514; Ward Two, 2,136; Ward Three, 2,804; Ward Four, 1,915; Ward Five, 2,908; Ward Six, 1,540.	
Number of public schools	45
One High, nine Grammar, one Training, three Mixed, thirty-one Primaries.	
Number of public school buildings	46
Number of teachers employed December, 1890	209
Increase for the year	4
High school, three males, thirteen females.	
Grammar schools, nine males, seventy-seven females.	
Mixed schools, three females.	
Primaries and Training school, ninety-eight females.	
Number of pupil teachers in Training school, fifty-eight.	
One teacher of penmanship.	
One teacher of drawing.	
One teacher of music.	
One teacher of sewing.	
One teacher of physical culture.	
One military instructor.	
Number of teachers of Evening schools employed during term of 1889–90	90
Whole number enrolled in the Evening schools for the term 1889–90,	2,867
Whole number enrolled in the day schools	11,247

Average number belonging to all the day schools	8,226
High, 474; Grammar, 3,317; Training and Primary, 4,372; Mixed, 63.	
Average attendance in all the schools	7,400
High, 450; Grammar, 3,006; Training and Primary, 3,889, Mixed, 55.	
Average number belonging to each teacher	40.4
High, 33.6; Grammar, 38.1; Training and Primary, 44.1; Mixed, 21.	
Average number belonging to each room	41
High, 43; Grammar, 40; Training and Primary, 44; Mixed, 21.	
Average per cent. of attendance	90.1
High, 95; Grammar, 91; Training and Primary, 89.9; Mixed, 87.	
Average cost of each pupil, for tuition only, based on the average number belonging	$17.15
High, $32.44; Grammar, $19.25; Training, Primary and Mixed, $13.96.	

RECEIPTS AND EXPENDITURES.

RECEIPTS.

Balance undrawn January 1, 1890		
Appropriated and assessed		$160,000 00
Received from loan		35,000 00
Received from other sources		1,160 64
Transferred from other appropriations		426 84
Total standing to credit of schools		$196,587 48

EXPENDITURES.

Paid to teachers of day schools:			
High school			$13,779 75
Grammar schools — Bartlett	$6,600 00		
Butler	7,385 27		
Colburn	5,419 11		
Edson	7,754 94		
Green	7,151 90		
Highland	9,681 75		
Moody	6,131 25		
Pawtucket	4,166 00		
Varnum	7,885 75		
		62,175 97	
Primary and Mixed schools			54,545 06
Training school			6,145 00
Teacher of penmanship			1,250 00
Teacher of drawing			1,250 00
Teacher of music			1,250 00
Amount carried forward			$140,395 78

Amount brought forward		140,395 78
Teacher of sewing		445 00
Military instructor		250 00
Total paid for instruction, inclusive of instruction in military tactics in High school		$141,090 78
Paid for evening schools:		
To teachers	$11,726 50	
Janitors	1,434 50	
Lighting	1,109 24	
Incidentals	729 76	
Aiken Avenue school	1,698 35	
		16,698 35
Evening Drawing school:		
To teachers	$4,035 00	
Janitors	175 00	
Lighting	326 74	
Incidentals	362 71	
		4,899 45
Fuel		7,635 72
Bills of Superintendent of Streets for hauling coal		329 60
Bills of Water Board for water		1,682 85
Bills of Water Board for water meters		68 05
General repairs, material, labor, etc.		519 65
Bills of Superintendent of Public Buildings, for lumber, making and repairing furniture, labor and new furniture		1,699 89
Distributing school reports		47 00
Text books		7,233 36
Drawing books, writing books, slates, pens, ink, paper, etc.		2,955 65
Incidentals on account of same		417 80
Material for Training school		229 96
Books, charts, etc., for general use		367 80
Bickford Lang, for use of team		100 00
High school battalion		163 75
High school graduating exercises		102 80
Rebinding school books		138 00
Taking census of school children		566 05
Drawing school exhibition		60 00
Rent of temporary rooms for school purposes		616 50
Lowell Gas Light Company, for gas for day schools		201 96
Supplies for janitors		567 39
Salary of Superintendent		2,600 00
Salary of Supervisor of evening schools		1,275 00
Salary of Truant Commissioners		2,400 00
Hardware		68 32
Teaming		84 61
Sewing material		296 33
Miscellaneous		1,470 86
Total expenditures		$196,587 48

SCHOOL HOUSES.

RECEIPTS.

Balance undrawn January 1, 1890	$32,987 65
Appropriated and assessed	25,000 00
Loan	22,500 00
Received from appropriation for schools for labor and materials	2,444 20
Received from other sources	213 28
	$83,145 13

EXPENDITURES.

Highland school annex	$14,487 68
Cabot Street school building	16,079 71
Cross Street school building	16,715 43
Janitors	16,275 84
General repairs	19,174 27
Transferred to appropriation for schools	412 20
	$83,145 13

The gross expenditure of this department, it will be seen, was $196,587.48. The net expenditure was $195,426.84. This is equivalent to a tax of about three mills on a dollar of the valuation of the city. Of this sum $164,736.78 was paid for salaries and wages—$141,090.78 being the amount of the salaries of the teachers of the day schools alone.

More than eleven thousand children have attended the public schools during the year. Sickness and inclement weather have been excuses for the withdrawal of children from school at times. Those who return after such absence demand and receive much attention from the teachers. The irregular attendants increase rather than diminish the number of teachers required to do the whole work thoroughly. A teacher can better teach fifty pupils all of whom constantly attend school than she can teach forty, ten of whom require frequent and special instruction, because of repeated absences from general recitations.

The figures in the statistical statement relating to the average membership and attendance do not tell the whole story. Under the rule regulating membership, an absence of five consecutive days severs a pupil's connection with the school, although it is known that he will certainly return and be

restored to membership. This rigid rule amounts to nothing, except to reduce the number belonging. It is a concession to the teachers' ambition to secure as high a per cent. of attendance as possible. The smaller the average number belonging with which the attendance is compared the greater the "per cent." One case of diphtheria, or scarlet fever, or measles, or whooping cough, may keep several families of children from school membership for several weeks. Children stay at home during periods of stormy weather, and of extreme cold. In many of the poorer families they are deprived of school privileges at times because of the real or pretended necessity of household service.

During the prevalence of the "grip," the membership and attendance of the schools were reduced to very low points. It would take several months of maximum membership and attendance to offset the effect on averages of that disease alone.

Average figures are not to be relied upon in estimating the teacher's work. The last year has been worse than other years, in respect to attendance. By the operation of the rule referred to the per cent. of attendance has been kept at about the same point by the prompt reduction of membership to meet reduced attendance. Experience justifies the statement that under the beneficent operation of the rule, no matter how irregular the attendance, the "per cent. of attendance" will not vary from year to year.

SCHOOL HOUSES.

It was expected that a new High School house would have been begun early in the year. It was due to this expectation largely, that more effort was not made to induce the City Council to erect other sorely needed school buildings. No new houses were started. Two primary school houses and an addition to the Highland School building, begun in 1889, were completed during the present year. Each of these structures contains four school-rooms. They are heated and ventilated elaborately and somewhat expensively, to meet

the requirements of the Statutes of the Commonwealth and the demands of the "State Inspector of Buildings." It is perhaps too much to say or too early to say—that the ventilation and heating of these buildings is beyond criticism. But enough has already been attained to warrant the *hope* that they will soon be beyond criticism.

The effort now being made by the state officers in the ventilation of new school houses throughout the Commonwealth, is an ambitious and a — worthy one. It is no more nor less than an attempt to provide an abundance of pure air for children to breathe while at school. All are familiar with the galvanized iron devices which have so long indicated that buildings on whose roofs they were fastened were dedicated to school purposes. The credulous and confiding have spoken of them as "ventilators." Some superstitious people have seriously maintained that these ventilators were endowed with the magic power of extracting through narrow shafts, the foul air of school houses occupied by two hundred, three hundred, five hundred pupils. Such has been the sublime confidence of some builders of school houses in Lowell in the efficacy of these ventilators that they have fastened them on the roofs without any connection whatever with the ventilating shafts which connected with the school rooms.

The state officers undertake to send into each room enough pure air for all the pupils and to take out of that room all the air contaminated by those pupils. They require a larger aperture through which to drive out foul air from one room, than we have often had for eight rooms. They require that a distinct shaft for the escape of foul air shall be given each room, extending to the roof or to "out-doors;" that in one way or another the vitiated air shall be made to go out of that shaft, and that an abundance of pure air shall be poured into the room. Beyond that they do not go. Methods for accomplishing this result are left to each city or town.

It seems to be generally admitted that it is best to warm the pure air before it is admitted to the school-room. "Indi-

rect radiation" was formerly thought to be too expensive for school-houses unless in the form of the old-fashioned furnaces. Nearly all the improved systems of heating pure air in school-houses involve the use of furnaces. The new school-houses are heated in this way. Of course the modern plan is very different from and much superior to that abandoned many years ago for direct radiation from steam pipes. It is asserted that the new method of heating is no more expensive than the old, provided equal amounts of pure air are furnished.

Notwithstanding the ancient superstition of the galvanized iron ventilator, no teacher ever relied upon its miraculous power. No teacher in any of our old-fashioned buildings now relies upon it. In all the rooms, filled with children and heated by "direct radiation" from stoves or steam pipes, the windows are always open to admit fresh air upon the heads of the children to keep them alive. In fact, the rules of the School Committee take the matter in hand and ingenuously provide for "small openings on opposite sides of the room . . . . rather than large openings," etc. By this system of heating and ventilating, ineffective and dangerous as it is, much "heat is wasted." Much of the cold air admitted through the windows falls immediately upon the steam pipes, is heated, and rushes back through the windows or above the level of pupils sitting in their seats. Under the new system the windows are to be closed and the pure air is to be kept in the room until used.

Apart from this special reference to the ventilation of these school-houses, little need be said. They are substantial brick structures, with sufficient cloak-rooms, offices and hall-ways. The sanitary appurtenances are beyond fault-finding. In fact, with the light we now have on school-house construction, nothing could be asked better than these plain and practical buildings. Their cost has been somewhat increased by the demands of the State, as has been seen, but there has been no extravagance in other respects.

The impression should not be given, however, that there

is anything of ugliness or rudeness about the interior or exterior of these buildings. It has been said that they are plain. So they are. There is no extravagant ornamentation, but everything about them is fitting, sufficient, perhaps elegant in its simplicity and utility.

HIGH SCHOOL-HOUSE.

It cannot be necessary to show that the present High School-house is unfit for the purpose for which it is used. Its inadequacy and general unfitness have been proved to the satisfaction of the tax-payers of Lowell. In their conclusion a committee of the State Legislature has fully concurred. Undoubtedly a new building would now have been in process of construction but for a difference of opinion as to where it should be built. It is useless to attempt to disguise the fact that there has not been an agreement upon a site.

Reasons have been given in previous reports from this office in favor of the present site somewhat enlarged. Some of the objections to that situation are superficially reasonable. They are honestly entertained. Many of them, it is believed, could be overcome if those who make them would consider well the scope and the ends of the school as it is now maintained. It is important to consider whether in the near future one or two schools will be wanted to take the place of the present school.

Every high school in the State has a character of its own. The Lowell school certainly has. In its general framework it is better adapted to Lowell than any other high school would be. Like every other school in a free Commonwealth, it has been shaped in its growth by the wishes of the community in which it is. It is the product of evolution. Certainly it is a growth and not a creation. Bishop Clark, Dr. Hoppin, Governor Currier, and Principals Forbes, Chase, Lord and Coburn, and their assistants, have each impressed something upon the school. Of them all,

Principal Chase with his long term of thirty-eight years has done altogether the most. But they all conformed to the wants of the people, and when there was a disagreement as to what those wants were, the teachers were obliged to conform to the wishes of the people of Lowell who employed them. Perhaps the most striking peculiarity of this school, bearing on the question of two buildings or one, is its great variety of *individual* courses of study, affording the widest option in the branches followed by each pupil. It would be hard to find a high school in which pupils have so free and convenient an opportunity, after they have entered and have made a selection of a course of study, to modify or entirely change it.

Some enter the school with the fixed purpose, approved by parents, of preparing for college or for a technical school like the Institute of Technology. They are few. A small percentage of the cost of instruction and of school apparatus is well utilized in furnishing such pupils what they seek. If they find that they are not adapted to the course they have undertaken — without great loss of time and without perceptible shock of any kind, they deflect slightly or turn about abruptly and pursue to completion a fairly symmetrical course, better for them or at least one more to the liking of themselves and their parents. The great majority of the pupils enter with crude notions, or without any at all, of what they want to do. Their parents send them to the High School because they are through the Grammar School and they wish them to have more education. They enter blindly on their work—care is taken that it shall be excellent work — and gradually gain for themselves and their parents definite purposes.

Formerly there were two pretty clearly marked courses of study in the school, designated the "English" and the "Classical." The Classical was for those who intended to go to college, and the English for those who did not. At that time a division of schools along the line of courses of study could have been made without difficulty. To-day

those who go to college from the High School are a smaller proportion of the school than formerly. Moreover, the infusion of English, the natural sciences, and modern languages into the demands for admission to the colleges, has gone so far, and the number of pupils who desire a course in Latin or Greek without any purpose to enter college has so increased, that the ancient division-line of the two old High School courses has been broken down. The distinction is now between the four years' and the three years' courses, and with the state of things now existing in the school no other classification is possible.

There is a great variety of subjects of study undertaken by pupils of the four years' course. That is, a pupil may graduate from that course, whose subjects of study may differ widely from those pursued by another graduate of the same course. The same is true of students who receive a three years' diploma. There are so many "equivalent" and interchangeable studies that a four years' course does not necessarily differ from the shorter one in the character of the work done, so much as in the amount or extent of it.

It is not necessary to say to those who are familiar with the increased variety and greater choice of studies permitted in these days in American colleges and high schools, that the Lowell High School is not unique in giving to its pupils an opportunity to select from a variety of studies. Its peculiarity consists in the *extent* of the option given. This statement is made for the benefit of Lowell people, and particularly for such of them as may have a controlling influence in the selection of a new building site. They need to know what the school is.

An old-fashioned division of high schools is still continued in some large cities — the division into a Latin and an English High School. In those cities the people became accustomed to the distinction between the schools in the days already spoken of, when the preparation for college was utterly different and distinct from a preparation for anything else in this world or the world to come. Undoubtedly two

schools of this kind, wherever maintained now, constantly approach each other in subjects of study, as the two old courses of study in the High School have.

The people of Lowell have not been accustomed to select between two high schools differing in character, and would find it a burden to do so. They would miss the almost automatic adjustment of the old High School plan if they should abandon it. In fact, the opinion is hazarded that in these times when high school pupils, whatever their purpose for the future, require so much in common, it is better from an educational standpoint that all high school courses should be under the same roof. Notwithstanding this conclusion as to the catholic character of the opportunities that should be afforded in every high school, the further opinion is ventured that Lowell will need, in a very few years, two high schools of the same general character. If we are to be content with one large school for the next fifty years, there would be much more excuse for moving the site. Prophets of future growth of the city might not agree that it would be a sufficient reason. If there were to be two schools of different courses, the same reflection would apply. There would be the same reason for changing the location to what fairly might be expected to be a central situation in the future. Whether there are to be one, two, or three high schools; until Lowell contains 200,000 inhabitants, they all should furnish the same opportunities. The great reason why there should be two schools is that the residence area is too large to be swept by one school. It is a simple reason, but it is ample.

The experience of other cities that have grown and have not been "laid out," justifies the certain expectation that in the early future there will be for Lowell a troublesome era of obstructed internal traffic and transit. The city is separated in the centre by canals, railroads, and "business." To build one High School house at the business centre would be a great blunder. There should be two schools, one to the east and the other to the west of that centre. The pupils

should not be transported to school. Every consideration of health and of family economy forbid it. There is no municipal economy in compelling it. Schools of different courses cannot be expected. There is no basis of classification for such a division, that can be adopted, that would meet the demands of the times. The pupils of the schools should not cross the crowded and obstructed centre of business — they should not be called upon to penetrate it to attend school.

Two schools are needed now. They will be much needed in five or ten years—one school east of the centre and one southwest of it. The most rapid growth of population is towards the west and south. It will continue to be in that direction. It will not *all* be in that direction. Merrimack Street will still be the great thoroughfare for the old northeasterly section of the city.

No better location for one school could be selected than the present High School ground. Unless there are concessions from the original owners of the land it must still be used for school purposes. It cannot profitably be used for a Grammar or a Primary School. If the city could get the privilege of selling and then should abandon it for school uses, a long contest over the purchase of new ground would follow; a long delay would ensue; a building condemned for sanitary reasons, and entirely unfit in other respects for a school-house, would continue indefinitely to be occupied by a school that outgrew it years ago.

It is certain that a second school-house should sometime be built west of the Boston & Lowell Railroad. How far west of it is, at the present time, uncertain. A few years of growth and settlement in that direction, of extension and development of "Ward Four," will enable that location to be determined with reasonable definiteness. If any section of the city more than another would be dissatisfied in a few years with any High School situated north and west of the railroad line, it would be the section west of that line.

In the "Appendix" presented with this report will still be found a "Classical," an "English" and a "College" course.

They are suggestions of good courses with appropriate names. They assist the pupils in selecting a symmetrical course, but probably not one member of the school now follows literally any of these prescriptions.

From the following list of general branches a selection is made each term by every High School pupil. He is expected to take three "studies" each half-year:

FIRST YEAR.

First Term.— Algebra, Latin, General History, Greek History, English Lessons.

Second Term.— Algebra, Latin, English History, Roman History, English Lessons, Physics.

SECOND YEAR.

First Term.— Latin, Greek, French, Geometry, Physics, Geography.

Second Term.— Latin, Greek, French, Geometry, Physics, Chemistry, English Grammar.

THIRD YEAR.

First Term.— Latin, Greek, French, College Mathematics, College Physics, Rhetoric, Chemistry, Arithmetic, English.

Second Term.— Latin, Greek, French, College Mathematics, College Physics, Geology, Political Science, Physiology, English.

FOURTH YEAR.

First Term.— Latin, Greek, German, College French, Astronomy, Literature, English.

Second Term.— Latin, Greek, German, College French, Botany, Literature, English.

HIGH SCHOOL GRADUATES OF 1890.

There were seventy-four in the graduating class; twenty-seven in the four years' course and forty-seven in the three years' course. Fewer of the graduating class of this year than of other years are known to be at advanced schools

or colleges. Philip S. Marden is at Dartmouth College, and Arthur W. Stone has entered Amherst College.

The exhibition of the graduating class was held at Huntington Hall, Thursday evening, June 26. The programme follows:

PROGRAMME.

1. MARCH. "H. S. B." . . . . . *W. E. Owen*
(Dedicated to the Battalion.)
GERMANIA ORCHESTRA.

2. OVERTURE. "Raymond." . . . . . *A. Thomas*
ORCHESTRA.

3. "DEATH OF GEN. TAYLOR."
PRESTON H. CARR.

4. "LIFE IN THE MIDDLE AGES." . . *Written by Blanche A. Cheney*
BLANCHE A. CHENEY.

5. MUSIC. (*a*) "Summer." . . . . . *Abt*
(*b*) "The Happy Miller." . . . . *G. A. Veazie, Jr.*

6. "POETRY OF THE SEA."
ARTHUR W. STONE.

7. "HANDS AND WHAT WE DO WITH THEM."
Written by Josephine G. Bowles
JOSEPHINE G. BOWLES.

8. "NOT MANY LIVES, BUT ONLY ONE HAVE WE."
Written by Mattie M. Leach
MATTIE M. LEACH.

9. MUSIC. "Lullaby." . . . . . *J. L. Frank*

10. "OUR DUTIES TO THE REPUBLIC."
HAROLD M. CHASE.

11. "EARLY NEW ENGLAND LIFE." . . *Written by Harriet M. Mallory*
HARRIET M. MALLORY

12. "LONGFELLOW'S FRIENDS." . . . . *Written by Clara L. Cutler*
MABEL M. GILMORE.

13. MUSIC. Selections from "Amorita." . . . . . *Czibulka*
ORCHESTRA.

14. "NEW ENGLAND'S THERMOPYLAE."
LEWIS E. MCBRAYNE.

15. "REMINISCENCES OF THE HIGH SCHOOL." . *Written by Grace M. Goodhue*
GRACE M. GOODHUE.

16. MUSIC. "Stars of the Summer Night." . . . . . *Owen*
(Words by H. W. Longfellow.)

17. "1840–1890." . . . . . *Written by Florence M. Churchill*
FLORENCE M. CHURCHILL.

18. "THE EMPEROR'S BREAKFAST." . . . . . *Edwin Arnold*
BESSIE E. HUNTOON.

19. MUSIC. "SWEET MAY." . . . . . *Barnby*
(Words by Thomas Moore.)

20. VALEDICTORY.
JOHN J. DEVINE.

21. PRESENTATION OF CARNEY MEDALS.
BY REV. SMITH BAKER.

22. PRESENTATION OF DIPLOMAS.
BY SUPT. GEORGE F. LAWTON.

23. SINGING OF CLASS ODE. . . . . *W. E. Owen*
(Words by Miss Bertha Allen.)

With our last song we'll make the echoes ring,
As of our school and school days now we sing
In accents sweet and clear.
We'll not forget in trouble, toil, or strife,
Whate'er the trials of our future life,
Our friends and comrades here.

That we, in all our lives, may steadfast be
To Him who guards us through eternity,
Is now our earnest prayer.
Oh! may He grant, in darkness or in light,
In brightest noonday and in deepest night,
His tender, watchful care.

While hallowed scenes fast to our mem'ries throng,
And happy voices in our parting song,
With joyous promise swell,
Still as from friends we hold so dear, we part,
A strange foreboding enters every heart,
Sadly we say "Farewell."

GRADUATES, 1890.

FOURTH YEAR.

Clifford Bronson Carey,
Harold Mayson Chase,
William Cogger,
John Joseph Devine,
Harry Stafford Duckworth,
Harrison Prescott Graves,
Frank Gilmore Gulliland,
Philip Sanford Marden,
Lewis Edward McBrayne,
Clinton Parker Russell,
Arthur Woodbridge Sanborn,
Edgar Josiah Sanborn,
Edwin Tyler Shaw,
Arthur Winslow Stone,
Blanche Arabelle Cheney,
Augusta Celia Cragin,
Annie Evelyn Cutler,
Clara Louise Cutler,
Sarah Rafter Dempsey,
Mabel Marie Gilmore,
Grace Mabel Goodhue,
Maud Evangeline Green,
Bessie Evelyn Huntoon,
Elizabeth Gertrude Lawler,
Annie Maud Robbins,
Alice Gertrude Stiles,
Grace Adelaide Washburn.

THIRD YEAR.

Preston Howard Carr,
Horace Fordyce Coburn,
John Henry Farrell,
James Frank Hall,
James Edward Leary,
John Edward McNabb,
Return Jonathan Meigs,
Sidney Melvin,
George Francis Noonan,
Everett Asa Perkins,
Fred Greenhalge Ripley,
Leonard Merritt Ryan,
George Washington Willis,
Bertha Allen,
Ethel Stearns Batchelor,
Josephine Giles Bowles,
Katherine Eugenie Cavanaugh,
Florence May Churchill,
Lilla Cooke,
Mary Agnese Cronin,
Katherine Cecilia Early,
Fleta Ell Foster,
Alice Cary Lydia Greene,
Annie Bertha Hartshorn,
Mary Louise Jockow,
Louise Augusta Johnson,
Mary Margaret Kearney,
Vivie Evans Knowlton,
Mattie May Leach,
Jennie Lind Lewis,
Nellie Veronica Little,
Harriet Minerva Mallory,
Mary Ann McMahon,
Mary Jane Mellen,
Lizzie Gay Morgan,
Annie Loretto Murphy,
Nellie Angela O'Connell,
Hattie Eleanor Penn,
Aimee Gertrude Philbrick,
Katharine Genevieve Roark,
Margaret Frances Roark.
Alice Isabella Smith,
Fannie Laura Smith,
Mary Evelyn Snow,
Lillian Lindsay Sproat,
Ella Marcella Whiteside,
Elizabeth Aroline Wilson.

CARNEY MEDAL SCHOLARS, 1890.

John Joseph Devine,
Lewis Edward McBrayne,
Leonard Merritt Ryan,
Grace Mabel Goodhue,
Mabel Marie Gilmore,
Blanche Arabelle Cheney.

THE TRAINING SCHOOL.

This school has been extended so as to include six rooms of the Colburn School. Early in the year, the School Committee voted that this should be done but should not go into effect until September. It was not accomplished until October when the teachers of the Colburn School whose rooms were to be appropriated, were all transferred to positions in other schools, and the Training School teachers were duly installed in their places. The Training School thus enlarged, with all of the Primary grades of pupils and nearly

all the Grammar grades, provides a sufficient field for testing pupil-teachers before they are sent out to the harder tests of miscellaneous substitute work in the various schools of the city. The two buildings containing the eleven Training School rooms are very near together, the principal or her two permanent assistants are in constant attendance, and there can be no schools in the city where unskilful or unfaithful teaching is likely to be detected with such certainty or with greater promptness. When once discovered such teaching is less likely to continue in the Training School than in the other schools.

The reasons for this have been set forth at some length in reports from this office. It may not be expected that they should be repeated. It perhaps may be said that a pupil-teacher who is doing harm in the Training School can be instantly transferred to attempt some other work, and if unable to do good work anywhere, she can and will be dismissed.

Under the old-fashioned plan in other schools the removal of an incompetent teacher was and is a superhuman task.

The Training School plan contemplates placing in each room and at the head of it one pupil-teacher of approved ability. In each room one, two, or three other pupil-teachers assist, observe and learn. They also render special services to pupils who need them, and this is no small advantage. In every large class in our schools taught by one teacher there are some pupils who need especial attention and more of the teacher's time than she can possibly afford them. This special feature is a great advantage enjoyed by the children "experimented" upon in the Training School that ought not to be overlooked.

So much is said because of the opinion still entertained by many that young ladies cannot be practically tested as teachers unless their pupils suffer injustice. Some of the ardent friends of the Training School assume that such a misfortune is a necessary concomitant to the system. It is a mistake. Before this school was established, teachers were

tested at the expense of some school. In the ancient days and in some that were not very ancient, they were *permanently employed* at the expense of the school.

The Training School has been partially in operation in the Colburn School for two or three months. After it is fairly tried there, if it ever is, it will be proved beyond dispute that the pupils are quite as well off as they were under their former excellent teachers.

One question of importance is, How many permanent assistants should the principal of the school have? Of course the answer to this question depends on how much and what kind of work the principal is to be held responsible for.

The prime object of the school was to settle with fairness and thoroughness whether or not applicants for teachers' positions were qualified for them. The written examination passed by her might be so conducted and regulated as to show that a young woman did or did not have a good common-school education, as well as a good theoretical knowledge of teaching. No written examination will show that a person without experience as a teacher can control, manage, teach and *run* a school. No education however thorough, and no training however protracted can teach some would-be teachers to "keep school." The work of the Training School was, primarily, to test teachers in the face of the enemy — that is in the school. If this were all that it were to do — beyond taking care that the pupils of other schools, where the teacher was being tried, did not suffer from poor teaching — it is possible the principal would need only one assistant. But those whose votes made the school possible decided that it should not be merely a test or probation school for teachers, but should be in fact, as well as in name, a Training School.

In the report of the Committee on the Training School for the year 1889, will be found a statement of the Normal work done in the school. It provides a brief, but to most of the pupil-teachers, an invaluable course. It gives the essentials of good teaching. It lays a foundation for intelligi-

ble criticism in their probation work. It is a great benevolence to those whose straitened circumstances render the expense of a teacher's course of study outside the city a burden hard to be borne. But it adds much to the number of permanent teachers necessary to give the required instruction.

The following are the names of the graduates in February and June. They have all been steadily employed since their graduation. All of the February class have been elected to permanent positions.

February Class, 1890.

Annie M. Buckminster,
Mary I. Donlan,
Minnie C. Gray,
Fanny A. Hardy,
Mary L. Keith,
Mary R. Marren,
Margaret T. McCarthy,
Margaret J. McCluskey,
Gertrude A. Rodliff,
Carrie M. Sprague.

June Class, 1890.

Grace E. Besse,
Margaret J. King,
Agnes T. Courtney,
Mary E. Meehan.

MANUAL TRAINING.

Among those particularly charged with the direction of the general policy of our schools there is much anxiety in regard to the subject of special manual training.

The pursuits of our people are such as to emphasize the propriety of special preparation in this direction in Lowell schools. Undoubtedly something would have been done during the year but for the expense incident to any new undertaking. The laws of the Commonwealth limit narrowly the indebtedness that may be incurred by our municipalities, and also the amount that may be raised by direct taxation. The increasing population, the building of new schoolhouses, and the ordinary expenses for maintaining our present school *plant* in its present condition, consume every dollar that City Councils in Lowell seem willing to appropriate. To establish a Manual Training School, symmetrical and sufficient in its proportions and opportunities to meet the

demands of educated opinion on this subject, would require a large outlay.

In the last report from this office, the recommendation was submitted that a small beginning should be made by building a "shop" where such High School boys as desired could have a course in wood and iron work. The recommendation is renewed. Let the beginning be made at once, and at a moderate cost, with the hope that so modest an undertaking may increase in the future to a thorough system of hand-training that shall be sufficient for all the children of the public schools of the city.

It is not to be inferred that there is literally nothing in our schools that is entitled to be designated as manual training. Every exercise in "penmanship" is a training of the hand and eye, and a very practical training too. Lowell continues to employ a "special teacher of penmanship." Doubtless this special attention is to attain skill in the art of writing rather than general cunning of the hand.

Viewed both in the light of its general educational value and from its standpoint as an art, penmanship is taught under the direction of Mr. Graves with much efficiency and profit.

DRAWING.

It is believed that drawing after its long trial as now taught in the Lowell schools is taught to more advantage than ever before. This is due to the industry and skill of the special teacher, Miss Underhill, to the increased experience of the regular teachers, and to the slow but certain progress in educational opinion everywhere toward an an intelligent apprehension of the object of the study of drawing in the public schools. This is not enthusiastic praise. It is not intended to be.

Neither the special industrial result nor the general educational result is at all a fulfilment of the promises made when drawing was forced into the schools by law twenty years ago.

Precedent has restricted this report to a mention of a few matters in the schools from time to time of special concern to the citizens of Lowell. Space will not be taken for an exhaustive statement of one person's opinion as to all the causes for the unfruitful results of public school drawing. The opinion heretofore given is reiterated — and it is believed to be the opinion of many trustworthy observers — that the great trouble is that drawing is not supplemented by more and varied manual training. The children draw. They do not under the eye of the teacher learn to put their drawing to sufficient *use*. It is to the credit of the teacher of drawing that she makes so much effort, without apparatus, to get useful products in miniature as an application of the drawing lessons.

THE EVENING DRAWING SCHOOL.

We have a Drawing School the practical value of certain features of which are evident to all. The Evening Drawing School continues to appropriate the old Mann School house, which was thoroughly renovated for occupation by the school in 1888. The school contains classes in mechanical and architectural drawing, in free-hand drawing, in practical design, as well as a large class in modelling.

That this school has been a boon to some young men, is certain and palpable. There are those in Lowell who have been lifted by it to positions of much greater usefulness to the community, and much greater enjoyment and profit to themselves. The greater part of the good work of this school cannot be appreciated by an inspection of such records as can be kept and reported. The annual exhibitions present to those similarly educated, some tests of the practical education of the pupils of the school.

The number of scholars in the various classes appears in the appended statement. A table of the expenses of the school appears in the general summary at the beginning of this report.

SUMMARY FOR THE YEAR 1890.

CLASS.	Whole number of pupils on time-book during the year.			Average number of pupils belonging to school.			Average attendance.			Per cent. of attendance.
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	
Architectural	121	1	122	45	1	46	33	1	34	74
Free-hand	76	111	187	64	89	153	40	68	108	71
Machine Drawing	110	0	110	95	0	95	70	0	70	74
Modelling	31	98	129	31	65	96	23	52	75	78
Practical Design	5	39	44	5	32	37	4	27	31	84
Totals	343	249	592	240	187	427	170	148	318	76

SEWING.

Under the head of "Manual Training" surely sewing is entitled to mention.

The teaching of sewing was introduced in the lower grades of the Grammar schools in April last. It has been taught in some of the Boston schools for thirty years.

Miss Ida J. Flint, the teacher of sewing, was a teacher at the Grand Street school and was transferred from it to her present position. Her study of methods of teaching this specialty, as well as her long service as an instructor of it under the auspices of a well-known charity in this city, determined the selection of Miss Flint.

That she has succeeded well in the difficult work of engrafting the new work upon our school system was doubtless evident to the able committee under whose direction she acted. By their recommendation she was first temporarily designated to conduct the new experiment and by their advice she was afterwards elected unanimously to the position of "teacher of sewing."

GRAMMAR AND PRIMARY SCHOOLS.

Effort is being constantly made to secure continuous, steady, progression through these schools. In going from room to room there should be no chasm to leap. There should be no chasm between the Primary and Grammar schools.

Children are admitted to the Primary schools three times a year. They *may* be promoted to the Grammar schools twice in a year. Admissions to the High School are permitted only once in a year. To complete the course of six years in June so that a class may go to the High School in September, the Grammar schools prefer to receive beginners only once in a year, in September. These schools resist mid-year admissions.

This, with laudable attempts at symmetrical classification in other respects, has tended to rigidity in the system of promotions. An effort has been made for several years to combat this tendency, with the conviction that if there is to be a "jog" anywhere it should be in the way of the comparatively few pupils who begin secondary education in the High School.

Children in a Primary school should never be put to threshing old straw because there is not "room for them in the Grammar school." Such an abomination it is believed has been committed even in Lowell. If it be literally true that there is not room in a Grammar school for children qualified to enter it then the Primary school teacher should take up the Grammar school work as a matter of course, even if a reader or an arithmetic should be required that had been regarded before as sacred to the building in which the Grammar school assembled.

Especially during the last year a healthy change has been noted in the methods of "going ahead." Even promotions when necessary in the middle of a term are now tolerated. In most of the schools "irregular" promotions are as frequent as good sense requires they should be. The

gap between the Primary and Grammar schools is being closed as it ought to be. As a mechanical assistance to the end desired, a change in the rules has been made, relieving the master of the duty of examining Primary school children for admission to the Grammar school. Under the new rule the principal of the Primary school sends her pupils, when found qualified, to a Grammar grade, just as the Grammar master sends his graduates to the High School. In case a mistake in promotion should be made, the master may return a pupil to the primary school in much the same way that pupils are returned from the High School to the Grammar school when found not qualified to go on. In reality, such mistakes are rare.

From the Primary to the Grammar schools should be a transition like that from grade to grade in the Grammar school. There should be a *step* not a gulf. It is beginning to be understood that the child who is being run through the machine is of more consequence than the machine.

The question, Is there a science of pedagogy? has been answered in the affirmative. Those concerned in the management of the Lowell schools believe in that answer. That those who teach should be skilled in the art of teaching ought to go without saying. A knowledge of the science is surely a great help in acquiring the art. An examination of the Normal course in the Training School will show that the School Committee value the study of the science. Nevertheless the experience of that very school emphasizes a wider experience, that the best informed in the science sometimes fail utterly to acquire the art.

If proof of a knowledge of the theory of teaching were proof of ability to teach and govern a school there would be no sufficient reason for maintaining the practice feature of the Training School — or for maintaining the school at all. Some people can sing like the nightingale, who know nothing of the theory of music. A study of it is necessary for the highest perfection of their art of song. There are millions of people who might study music for a life time, and yet they could never sing.

Nine-tenths of the public school teachers of Massachusetts are women. They begin when they are young women. They have taken no vow of constancy to the business of school-teaching. That they should become profound students of the philosophy of teaching or of any other philosophy is not to be expected. The salaries that are paid them, or that the public can be induced to pay them will not compensate them for such preparation.

Very many teachers of Lowell are students of pedagogy and in its most practical phases; they are readers of educational works, and they are skilled in the art of teaching children. They have sufficient knowledge of the science and art with which they deal to enable them to keep up with the general school progress in the country. They know enough to distinguish between a device and a principle of education; and that is more than is known by such educational philosophers as sweepingly condemn all public school methods, except such as they suppose have been invented within a decade. Those who assume that all public school teaching was entirely, utterly wrong and unfruitful until they made their recent and valuable discoveries know little of the work that is constantly necessary to be done among the thousands of children in a place like Lowell.

The educational and educated instinct of a practical teacher with a fair Normal education is worth more than all the learning of these men. No slur is intended upon the many distinguished leaders of educational thought, many of whom have had experience "in the field," out of the fulness of which they so profitably speak. They are the very Princes of Pedagogy!

Reference is made to another set of men, many of whom are honest and sincere. They think they have perfect systems which they have largely invented, which are most logically founded, most symmetrically built and of universal application. One test of them is their supposed discovery of a symmetrical universal principle like the law of gravitation. They are numerous. In every department of usefulness

great discoverers appear at intervals, and usually alone. They don't come in shoals.

All improvements in prescribed methods of teaching, in text-books, in devices and apparatus of every kind are of small importance in comparison with improvement in the personal qualifications and equipment of the teacher. So great a factor is the teacher, that the product of good teachers hampered by the poorest system of teaching is greater than the result of the best system and indifferently good teachers. The teacher is the school more than the great Louis was "the state."

The standard of teaching in the Lowell schools is now good. It must not fall. It should not remain where it is; it should go higher. An honest and determined effort is being made to raise that standard. To paralyze that effort ignorantly would be a terrible blunder. To do it purposely would be an atrocious crime.

CHANGES IN THE ROLL OF TEACHERS.

RESIGNED.

		Term of Service.
Annie S. Harlow,	School Street School,	17 years.
Bridget T. Maguire,	Agawam Street School,	6 "
Abby L. Sargent,	Charles Street School,	17 "
Maria C. R. Swan,	Edson School,	29 "
Mary F. Carleton,	Edson School,	34 "

TRANSFERRED.

Lizzie F. Lamere, From the Highland School to the West Sixth St. School.
Minnie A. Willson, From the West Sixth St. School to the Grand St. School.
Katherine T. Lennon, From the Tenth St. School to the Cheever St. School.
Alice A. Holtham, From the River St. School to the Tenth St. School.
Susan M. Andrews, From the Colburn School to the Edson School.
Agnes L. Donoghue, " " " " Butler School.
Elizabeth A. Balch, " " " " Moody School.
Annie A. Slavin, " " " " Charles St. School.
Arvilla L. Reader, " " " " Highland School.
Margie F. Marren, " " " " Edson School.
Ida J. Flint, From the Grand St. School to be Teacher of Sewing in the Grammar Schools.

ELECTED.

Emma L. Bradley,	To the High School.
Gertrude A. Rodliff,	To the High School.
Marietta U. Cassidy,	To the High School.
Annie M. Buckminster,	Assigned to Varnum Avenue School.
Carrie M. Sprague,	Assigned to the Highland School.
Mary R. Marren,	Assigned to the Worthen Street School.
Mary L. Keith,	Assigned to the Edson School.
Margaret J. McCluskey,	Assigned to the River Street School.
Minnie C. Gray,	Assigned to the Highland School.
Mary I. Donlan,	Assigned to the Butler School.
Fanny A. Hardy,	Assigned to the School Street School.
Margaret T. McCarthy	Assigned to the Butler School.

Dr. Gustavus A. Gerry, a member of the School Committee, died October 24th. This was the first instance of a death of a member of the School Committee of the City of Lowell before the completion of his official term.

So much of the best work of a faithful member of this municipal board is unpublished, that it is seldom appreciated or even known by our citizens. Public school work draws out of a true New Englander, a true American, the very best that is in him. It was a constant stimulus to Dr. Gerry. The earnestness, the honesty, and the efficiency which he brought to the discharge of his school duties can be fully realized only by those who were associated with him in that work, on terms of the closest intimacy. By his unselfish devotion to the schools, by his courage and zeal in their behalf, by the wisdom and perfect purity of his measures for their improvement, he earned a high place on that roll of the benefactors of Lowell, which begins with the names of Edson, Bartlett and Green.

The tribute to his memory adopted by the School Committee, written by one of their number who knew him well, is annexed to this report. It is a just statement and fittingly expresses the tender regard in which he was held by his fellow members.

I desire to make the usual acknowedgment of generous support and hearty co-operation received from official superiors and official subordinates.

Mr. Smith, the Supervisor of Evening Schools, has performed the duties of that responsible position as well as those appertaining to the other departments of his service at this office with much efficiency and fidelity.

Nobody unless familiar with the daily work of the Truant Commissioners can fully appreciate the patient industry and the uniform tact and good judgment with which they meet the increasing demands of their department.

Respectfully submitted,

GEO. F. LAWTON,

Superintendent of Schools.

Dr. Gustavus A. Gerry,

SENIOR MEMBER OF THE SCHOOL COMMITTEE

FROM WARD TWO,

Died Friday, October 24, A. D. 1890.

At a meeting of the School Committee, held October 27th, 1890, the following tribute and resolutions were unanimously adopted:

It is with deep pain that the School Committee of the City of Lowell receive the intelligence of the death of one of their number, Dr. Gustavus A. Gerry, who, for nearly four consecutive years has been an honored and useful member of this body. In all our association with him in this relationship we remember him to respect him. His part has always been that of the Christian gentlemau. We always knew that iu him we would find sincerity, candor, integrity. He was intelligent in his views and, what is better, unswerving in his fidelity to them. His long residence in the city made him familiar with its needs, and among them he ever recognized the cause of education as first and foremost. Until worn down by sickness he was faithful to all the duties that his connection with this Board imposed upon him. On his sick bed, knowing that the sentence of death was passed upon him and that the Messenger of Change was fast approaching, he still thought of the schools of Lowell, and spoke of their interests, present and future.

Iu view of the truth of all this, and the sad fact that we shall see his face no more, we, the members of this Board, in committee assembled, do hereby

Resolve, That we have lost a faithful and able counsellor and co-worker, aud that the schools of Lowell have lost a true and valuable friend.

Resolved, That we cherish the memory of his worth and his fidelity, and that we recognize the value and importance of such service as he has rendered to so important an interest as the educational department of our city government.

Resolved, That this preamble and the accompanying resolutions be copied with the records of the doiugs of the School Committee of Lowell, and that a copy of the same be sent to the bereaved family, with whom we sincerely sympathize.

We recommend that his desk in the School Committee room be draped with mourning as a tribute of respect to his memory for the next thirty days.

RANSOM A. GREENE,
LAWRENCE CUMMINGS,
GREENLEAF C. BROCK,
} *Committee.*

School Committee Rooms, Lowell, Oct. 27, 1890.

1890.	Absentees.	Truants.	Working without certificates.	Wandering about the streets.	New scholars.	Juvenile offenders.	Total number cases investigated.	Arrested.	Sentenced to the Reform School.	Placed on probation.	Visited second time.	Visited third time.	Working certificates issued—(14 to 16 years of age.)	Working certificates approved—(13 to 14 years of age.)
January	120	22	2	11	2	3	160	7	4	3	6	2	74	8
February	70	41	1	6	4	4	126	9	3	6	6	4	119	7
March	94	84	4	5	4	3	194	11	4	7	6	2	195	2
April	93	37	1	11	5	1	148	6	4	2	3	5	147	33
May	87	52	2	8	1	8	158	10	6	4	6	1	134	27
June	86	35	1	18	0	12	152	24	19	5	6	2	186	27
July	..	..	..	..	..	..	..	..	..	..	..	..	176	10
August	..	..	..	..	..	..	..	..	..	..	..	..	156	4
September	55	10	1	2	2	0	70	2	2	0	0	0	127	7
October	119	36	3	15	4	1	178	10	7	3	4	3	170	9
November	63	26	1	9	2	1	102	10	4	6	3	5	182	8
December	42	5	3	2	2	0	54	1	0	1	3	1	82	3
Totals	829	348	19	89	26	33	1342	90	53	37	43	25	1748	145

APPENDIX.

A.

ROLL OF TEACHERS.

GIVING NAME, GRADE, RESIDENCE, DATE OF ELECTION, AND SALARY.

HIGH SCHOOL.

Kirk and Anne streets.

Frank F. Coburn, principal, *Science*, 7 Belmont street,	1880	$2,200
Frank B. Sherburne, *Language*, 58 Dover street,	1883	1,800
Cyrus W. Irish, *Science*, 152 Moore street,	1885	1,800
Mary A. Webster, *Language and Mathematics*, 17 Varney street,	1860	800
Marietta Melvin, *Language*, 381 Merrimack street,	1859	700
Elizabeth McDaniels, *Language and Literature*, 162 Stackpole street,	1868	700
Harriet C. Hovey, *Language*, 12 Fourth street,	1870	700
Charlotte E. Draper, *Language and Science*, Belmont avenue, corner Talbot street,	1870	700
Alice J. Chase, *Science and Mathematics*, 158 Stackpole street,	1877	700
Susie L. D. Watson, *Mathematics and English*, 31½ Dutton street,	1885	700
Adelaide Baker, *Language*, 98 Sixth street,	1885	700
Jennie L. Allen, *Mathematics and English*, 411 Middlesex street,	1885	700
Maud Hadley, *Mathematics and English*, Cumberland road,	1887	700
Emma L. Bradley, *Mathematics*, 347 Westford street,	1890	600
Gertrude A. Rodliff, *Mathematics*, 179 Pawtucket street,	1890	600
Marietta Cassidy, *Language*, Mt. Grove street,	1890	600

BARTLETT GRAMMAR SCHOOL.

Corner Hancock avenue and Clark streets.

Samuel Bement, master, 428 Merrimack street,	1851	$1,800
Mary B. Kent, 1st and 2nd, 428 Merrimack street,	1859	600
Abbie E. French, 3rd and 4th, 259 Beacon street,	1874	600
Belle F. Batchelder, 5th and 6th, 7 Arlington street,	1883	600

Belle A. Prescott, 7th and 8th, 29 Mt. Washington street,	1878	$600
M. Ida Howe, 9th and 10th, 54 Methuen street,	1873	600
Frances M. Talbot, 9th and 10th, 29 A street,	1882	600
Lola Cheney, 11th and 12th, 142 Worthen street,	1882	600
Amy L. Tucke, 11th and 12th, 92 Fletcher street,	1880	600

MORRILL SCHOOL.

Common and Adams streets.

Ellen F. Coughlin, principal, 2nd and 3rd, 155 Cross street,	1853	$600
Nellie M. Brown, 1st and 2nd, 158 Fletcher street,	1865	600
Annie M. Courtney, 4th and 5th, 8 Lagrange street,	1887	600
Charlotte E. Brown, 6th, 158 Fletcher street,	1870	600

SCHOOL STREET SCHOOL.

School street, between Pawtucket and Bowers streets.

Eugenie L. Hogan, principal, 1st, 2nd and 3rd, 14 Gold street,	1889	$500
Fannie A. Hardy, 4th, 5th and 6th, 10 Mass. Corp.,	1890	450

CROSS STREET SCHOOL.

Cross street, between Fletcher and School streets.

Sarah E. Scales, principal, 1st, 2nd and 3rd, 10 Ralph street,	1866	$600
Ellen M. White, 4th and 5th, 59 Westford street,	1863	600
Ethel G. Wheeler, 6th, 185 Moody street,	1889	500

BUTLER GRAMMAR SCHOOL.

Gorham street.

Cornelius F. Callahan, master, 5 Fenwick street,	1884	$1,800
Albertie T. Lane, 1st and 2nd, 8 Richmond street,	1889	500
Laura F. Howe, 3rd and 4th, 166 Stackpole street,	1856	600
Nellie F. Keefe, 5th and 6th, 41 Cedar street,	1879	600
Nellie F. Murphy, 7th and 8th, 50 Elm street,	1878	600
Anastasia C. Corbett, 9th and 10th, 65 Gorham street,	1887	600
Katie E. Kelley, 9th and 10th, 97 Moore street,	1883	600
Delia T. Brady, 11th and 12th, 375 Central street,	1877	600
Mary L. McSorley, 11th and 12th, 20 Ash street,	1879	600
Margaret T. McCarthy, 7th and 8th, 261 Market street,	1890	450

Mary I. Donlon, 11th and 12th, 218 Gorham street,	1890	$450
Agnes L. Donoghue, 9th and 11th, 14 Suffolk street,	1887	600

LYON STREET SCHOOL.

Corner Lyon and Central streets.

Alice T. Lee, principal, 1st and 2nd, 113 Lawrence street,	1878	$600
Anabel Costello, 3rd and 4th, 203 Nesmith street,	1888	600
Mary J. McCarry, 5th, 23 Mead street,	1881	600
Nellie A. Hunt, 6th, 48 Elm street,	1884	600

CARTER STREET SCHOOL.

Carter street.

Belle T. Vinal, principal, 1st and 2nd, 11 Simpson place,	1873	$600
Georgia A. Harnden, 3rd and 4th, cor. Sherman and Pleasant sts.,	1885	600
Cornelia M. Davis, 5th and 6th, 40 Rock street,	1871	600

AGAWAM STREET SCHOOL.

Corner Agawam and Barrington streets.

Mary McLaughlin, principal, 1st and 2nd, 234 Lawrence street,	1879	$600
Annie M. Lee, 3rd and 4th, 113 Lawrence street,	1885	600
Mary A. Fay, 5th and 6th, 94 Stackpole street,	1889	500

LONDON STREET SCHOOL.

Corner London and West streets.

Lizzie R. Maguire, principal, 1st and 2nd, 23 Lyon street,	1884	$600
Rose E. McVey, 3rd and 4th, 62 Gorham street	1887	600

WEED STREET SCHOOL.

Corner Gorham and Weed Streets.

Mary B. McGovern, principal, 4th, 5th and 6th, 13 Pearl street,	1886	$600
Agnes M. Foley, 1st, 2nd and 3rd, 31 Newhall street,	1887	600

COLBURN GRAMMAR SCHOOL.

Lawrence street

Geo. W. Howe, master, 54 Methuen street,	1880	$1,800
Elizabeth W. Frost, 1st and 2nd, 132 E. Merrimack street,	1857	600
Sarah J. Crosby, 3rd and 4th, 151 Gorham street,	1868	600

CENTRAL STREET SCHOOL.

Central street, opposite Hudson street.

Eliza Cowley, principal, 1st and 2nd, 178 Lawrence street,	1857	$600
Charlotte McDaniels, 3rd and 4th, 162 Stackpole street,	1878	600
Katie J. Lawler, 4th and 5th, 104 High street,	1885	600
Lilla J. Greenhalge, 6th, 133 Moore street,	1871	600

CHAPEL STREET SCHOOL.

Chapel street, opposite Pollard street.

Katie E. McOwen, 1st, 2nd and 3rd, 30 Linden street,	1882	$600
Mary A. Farnham, 4th, 5th and 6th, 28 Robinson street,	1887	600

COTTAGE STREET SCHOOL.

Corner Cottage and Chapel streets.

Lucy F. Carleton, principal, 1st, 2nd and 3rd, 42 Chapel street,	1855	600
Maggie A. Harrihan, 4th, 5th and 6th, 20 Marshall street,	1882	$600

AMES STREET SCHOOL.

Corner Lawrence and Ames streets.

Amanda M. Hadley, principal, 1st and 2nd, 60 Lincoln street,	1870	$600
Katie F. Murphy, 2nd and 3rd, 419 Central street,	1885	600
Mary E. Drew, 4th and 5th, 28 Wamesit street,	1868	600
Lizzie M. Hadley, 6th, 177 Moody street,	1869	600

CHARLES STREET SCHOOL.

Charles street, between Gorham and Chapel streets.

Alice T. Owens, principal, 1st and 2nd, 45 Walnut street,	1878	$600
Ella E. Gardner, 3d and 4th, 6 Lombard street,	1871	600
Annie E. Slavin, 4th and 5th, 125 South street,	1887	600

LOWELL TRAINING SCHOOL.

Charles street, near Lawrence street.

Julia M. Dewey, principal, 12 Middlesex street,	1888	$1,500
Katherine T. Keyes, 1st assistant, 213 Market street,	1889	800
Alice M. Clark, 2nd assistant, 46 Chapel street,	1878	700
Mabel Ewings, 3rd assistant, 75 Middlesex street,	1891	500

EDSON GRAMMAR SCHOOL.

Highland street.

C. W. Burbank, master, 92 Bowers street,	1872	$1,800
Frances M. Webster, 1st and 2nd, 17 Varney street,	1873	600
Rosalie T. Burns, 3rd and 4th, 7 Prescott Corp.,	1878	600
Nettie E. Carleton, 4th and 5th, 42 Chapel street,	1867	600
Carrie Stone, 5th and 6th, 13 Cottage street,	1885	600
Anna A. Sargent, 6th and 8th, 152 Appleton street,	1864	600
Fanny A. Scripture, 8th, 269 Central street,	1873	600
Susan M. Andrews, 9th and 10th, 42 Walnut street,	1864	600
Mary L. Keith, 10th, 106 Appleton street,	1890	450
Mary A. Balch, 10th and 11th, 126 Appleton street,	1865	600
Kate J. Hayes, 12th, 13 Floyd street,	1879	600
Margie F. Marren, 12th, 86 Mt. Vernon street,	1886	600

ELIOT SCHOOL.

Corner Favor and Summer streets.

Ellen A. Stillings, principal, 5th, 107 Howard street,	1875	$600
Ellen A. Corbett, 1st and 2nd, 65 Gorham street,	1878	600
Nellie T. O'Grady, 3rd and 4th, 59 Newhall street,	1881	600
Winifred Haggerty, 6th, 77 Chestnut street,	1884	600

HOWARD STREET SCHOOL.

Howard street, between Chelmsford and Hale streets.

Ellen A. Bridge, principal, 1st and 2nd, 54 Tyler street,	1857	$600
Marion E. Greene, 3d and 4th, 113 Howard street,	1884	600

GRAND STREET SCHOOL.

(*Howard Street Annex.*)

Grand street, between Westford and Middlesex streets.

Jennie M. Bennett, 5th, 246 Westford street,	1885	$600
Minnie A. Willson, 6th, cor. Hale and Cambridge streets,	1887	600

GREENE GRAMMAR SCHOOL.

Merrimack street.

A. L. Bacheller, master, 287 Central street,	1874	$1,800
Ruth B. Bailey, 1st and 2nd, 210 Moody street,	1871	600

Clara A. Hanaford, 3rd and 4th, 20 Mt. Washington street,	1869	$600
Lizzie A. Nolan, 5th and 6th, 33 Anne street,	1876	600
Blanche E. Fay, 7th and 8th, 44 Elm street,	1885	600
Kate F. Cassidy, 9th and 10th, Mt. Grove street,	1883	600
Lena A. Gookin, 9th and 10th, 5 Walden street,	1880	600
Carrie A. Miles, 8th and 11th, 12 Middlesex street,	1882	600
Ella J Carlton, 11th and 12th, 316 Bridge street,	1882	600
Kate F. McCarthy, 11th and 12th, 261 Market street,	1889	500

KIRK STREET SCHOOL.

Corner Kirk and Lee streets.

Eliza A. Davis, principal, 1st, 2nd and 3rd, 40 Rock street,	1881	$600
Laura H. Palmer, 4th, 5th and 6th, 167 Bridge street,	1882	600

CABOT STREET SCHOOL.

Corner Cabot and Ford streets.

Nellie T. Gilday, principal, 5th and 6th, 14 Varney street,	1886	$600
Martha A. Neal, 5th and 6th, 10 Dodge street,	1847	600
Mary J. Murphy, 3rd and 4th, 34 Jefferson street,	1887	600
Abbie V. Wheeler, 1st and 2nd, 185 Moody street,	1879	600

CHEEVER STREET SCHOOL.

Cheever street.

Ida J. Clarke, 5th and 6th, 157 Moody street,	1887	$600
Katherine T. Lennon, 4th and 5th, School, corner Bowers street,	1885	600
Minnie F. Hill, 5th and 6th, 28 Madison street,	1887	600
——— ———, 5th and 6th.		

WORTHEN STREET SCHOOL.

Worthen street, between Market and Broadway.

Mary L. Hill, principal, 1st and 2nd, 126 Worthen street,	1858	$600
Esther V. Green, 3rd and 4th, 41 Butterfield street,	1889	500
Mary J. Alger, 5th, 9 Tyler street,	1868	600
Mary R. Marren, 6th, 86 Mt. Washington street,	1890	450

HIGHLAND GRAMMAR SCHOOL.

West Pine street.

Chas. W. Morey, master, 14 Belmont street,	1880	$1,800
——— ———, 1st and 2nd.		
Flora I. Moffitt, 1st and 2nd, 43 Tyler street,	1887	600
Abbie F. Woodward, 3rd and 4th, 73 Branch street,	1869	600
Estelle L. Whitney, 3rd and 4th, 101 Chapel street,	1885	600
Adelaide F. Bennett, 4th, 5th and 6th, 126 Walker street,	1882	600
Nellie A. Coburn, 5th and 6th, So. Walker street,	1886	600
Luella A. Wardwell, 6th, 7th and 8th, 30 School street,	1870	600
Minnie C. Gray, 7th and 8th, 78 Liberty street,	1890	450
Fannie M. Clark, 8th, 9th and 10th, 30 School street,	1874	600
Edith L. Monroe, 9th and 10th, Billerica,	1885	600
Hattie B. Frye, 11th and 12th, 26 Walker street,	1882	600
Carrie M. Sprague, 11th and 12th, 119 Howard street,	1890	450
Ellen L. Floyd, 9th and 10th, 86 Stevens street,	1887	600
Arvilla L. Reader, 11th and 12th, 106 Appleton street,	1871	600

FRANKLIN SCHOOL.

Corner Branch and Middlesex streets.

Sarah C. Fiske, principal, 1st and 2nd, 134 Appleton street,	1866	$600
Lizzie S. Lowe, 3rd and 4th, 3 Nichols street,	1857	600
Marion J. Stevenson, 5th, 45 Princeton street,	1878	600
Katie G. Jones, 6th, 49 Andover street,	1880	600

PLAIN STREET SCHOOL.

Corner Plain and Powell streets.

Laura E. Lee, principal, 4th, 5th and 6th, 141 Grand street,	1873	$600
Flora H. Sprague, 1st, 2nd and 3rd, 14 School street,	1882	600

DOVER STREET SCHOOL.

Dover street, between Middlesex and Grove streets.

Clara B. Horne, principal, 1st and 2nd, 20 So. Highland street,	1877	$600
Clementine H. Bowers, 3rd and 4th, 18 Loring street,	1876	600
Bertha Gardner, 5th and 6th, 68 French street,	1887	600

POWELL STREET SCHOOL.

Powell street, near Liberty street.

Viola A. Hamblett, principal, 4th, 5th and 6th, 60 School street,	1876	$600
Carrie J. Bailey, 1st, 2nd and 3rd, 16 Loring street, . . .	1884	600

MIDDLESEX VILLAGE SCHOOL.

Hattie F. Wakefield, ungraded, 2 Loring street, . . .	1889	$500

MOODY GRAMMAR SCHOOL.

Corner High and East Merrimack streets.

Wm. S. Greene, master, 195 Westford street, ...	1883	$1,800
Alice M. Sanborn, 1st and 2nd, 27 Fort Hill avenue . . .	1881	600
Mary E. Way, 3rd and 4th, 22 Tyler street, ...	1858	600
Carrie F. Smith, 5th and 6th, 92 E. Merrimack street, . .	1883	600
Mercena F. Whitehorn, 7th and 8th, 389 Beacon street, . .	1877	600
Elizabeth A. Balch, 3rd and 4th, 7th and 8th, 133 E. Merrimack st.,	1873	600
Laura J. Pindar, 9th and 10th, 35 Tyler street, ...	1856	600
Frances E. Hardman, 11th and 12th, 158 Stackpole street, .	1873	600
Frances E. Garrity, 9th and 10th, 11th and 12, 22 Read street, .	1874	600

POND STREET SCHOOL.

Corner High and Pond streets.

Marietta Hill, principal, 1st, 2nd and 3rd, 122 Stackpole street,	1870	$600
Lizzie A. Molloy, 4th, 5th and 6th, 99 High street, ...	1887	600

HIGH STREET SCHOOL.

High street, between Chestnut and Everett streets.

——— ———, 1st, 2nd and 3rd.

Clara A. Emerson, 4th, 5th and 6th, 79 Appleton street, . .	1869	$600

FAYETTE STREET SCHOOL.

Fayette street, between Chestnut and Everett streets.

Helen Kohawn, principal, 1st, 2nd and 3rd, 17 Thirteenth street,	1877	$600
Mary E. Smith, 4th, 5th and 6th, 73 Fayette street, . . .	1887	600

SYCAMORE STREET SCHOOL.

Sycamore street.

——— ———, ungraded, ———.

PAWTUCKET GRAMMAR SCHOOL.

Mammoth Road, Pawtucketville.

Wm. P. Barry, master, 62 Suffolk street,	1887	$1,800
Nellie MacDonald, 1st, 2nd, 3rd and 4th, 10 Marsh street,	1878	600
Celestia P. Chase, 5th, 6th, 7th and 8th, 131 School street,	1867	600
Julia M. Healey, 9th and 10th, 80 Bowers street,	1870	600
Effie I. Mashall, 11th and 12th, 6 Riverside street,	1887	600

MAMMOTH ROAD SCHOOL.

Pawtucket School Building.

Ellen M. Holden, principal, 1st, 2nd and 3rd, 3 So. Loring street,	1876	$600
Alice M. Batchelder, 3rd, 4th and 5th, 7 Arlington street,	1887	600
Carrie M. Hart, 5th and 6th, 6 Varney street,	1887	600

VARNUM AVENUE SCHOOL.

Annie M. Buckminster, ungraded, 4 Riverside street,	1890	$450

VARNUM GRAMMAR SCHOOL.

Myrtle street, Centralville.

A. K. Whitcomb, master, 17 Durant street,	1878	$1,800
Georgianna F. Vinton, 1st and 2nd, 32 Fourth street,	1872	600
Harriet Bradley, 3rd and 4th, 38 Fourth street,	1854	600
Lizzie C. Kennedy, 5th and 6th, Eighteenth street,	1884	600
Minnie F. Wing, 6th and 7th, 43 Third street,	1879	600
Sarah A. Bradley, 7th and 8th, 145 Bridge street,	1857	600
Maria W. Roberts, 8th and 9th, 53 Third street,	1875	600
Alice R. Keese, 9th and 10th, 4 Richardson street,	1881	600
Lizzie A. Hart, 10th and 11th, 6 Varney street,	1886	600
Rosa A. Dowd, 11th and 12th, 77 Tenth street,	1884	600
Julia Williams, 11th and 12th, 17 Fifth street,	1886	600

WEST SIXTH STREET SCHOOL.

West Sixth, between Coburn and Jewett streets, Centralville.

Stella J. Allen, principal, 1st and 2nd, 46 Fourth street	1879	$600
Hattie A. Palmer, 2nd and 3rd, 12 E. Merrimack street,	1888	600
Marion S. Keyes, 4th and 5th, 64 Third street,	1888	600
Lizzie F. Lamere, 6th, 213 Bridge street,	1887	600

TENTH STREET SCHOOL.

Corner Tenth and Varnum streets, Centralville.

Mary F. Beane, principal, 1st and 2nd, 78 Tenth street,	1879	$600
Fannie H. Murphy, 2nd and 3rd, Twelfth Street,	1889	450
Alice A. Holtham, 4th and 5th, 365 Bridge street,	1887	600
Ella A. Bailey, 6th, 164 Bridge street,	1869	600

LAKEVIEW AVENUE SCHOOL.

Lakeview Avenue, Centralville.

Marietta F. Crowley, principal, 1st and 2nd, 23 Marion street,	1879	$600
Hattie S. Simpson, 3rd and 4th, 48 Third street,	1887	600
Margaret J. McCluskey, 5th, 77 Lakeview avenue,	1890	450
——— ———, 6th, ———.		

FOURTH STREET SCHOOL.

Helen M. Brown, ungraded, 141 Bridge street,	1888	$600

TEACHER OF PENMANSHIP.

Thomas M. Graves, 64 Bridge street,	1883	$1,250

MUSICAL DIRECTOR.

Walter E. Owen, 33 Oak Street,	1886	$1,250

TEACHER OF DRAWING.

Olive E. Underhill, 115 East Merrimack street,	1887	$1,250

TEACHER OF SEWING.

Ida J. Flint, 142 Liberty street,	1880	$700

MILITARY INSTRUCTOR.

Alexander Greig, Jr., 38 Cambridge street,	1891	$250

TEACHER OF PHYSICAL CULTURE.

Emma A. Huntley.

B.

SALARIES OF TEACHERS.

HIGH SCHOOL.

Principal,	$2,200 00
Male Assistants,	1,800 00
First Female Assistant,	800 00
Other Female Assistants, first year,	600 00
Other Female Assistants, second year,	650 00
Other Female Assistants, after second year,	700 00

GRAMMAR SCHOOLS.

Principals (males),	$1,800 00
Assistants, first year,	450 00
Assistants, second year,	500 00
Assistants, third year and after,	600 00
Teacher of Penmanship,	1,250 00
Teacher of Drawing,	1,250 00
Teacher of Music,	1,250 00

PRIMARY SCHOOLS.

Teachers, first year,	$450 00
Teachers, second year,	500 00
Teachers, third year and after,	600 00

TRAINING SCHOOL.

Principal,	$1,500 00
First Assistant,	800 00
Second Assistant,	700 00
Third Assistant,	500 00

TEMPORARY TEACHERS.

Male teachers, for every school-day's service,	$3 00
Female teachers in High school, for every school-day's service,	1 75
Female teachers in other schools, for every school-day's service,	1 25

EVENING SCHOOLS.

Principals, High school, per evening,	$5 00
Principals, Elementary, per evening,	2 00
Assistants, High school, per evening,	2 00
Female Assistants, Elementary schools, per evening,	1 25

C.

TEXT-BOOKS USED IN THE PUBLIC SCHOOLS.

Hillard's Readers, Franklin Series.

PRIMARY SCHOOLS.

First Reader.
Second Reader.
Third Reader.
Franklin Primary Arithmetic.
Monroe's Reading Charts.
Primary Music Reader.
Normal Music Chart.

GRAMMAR SCHOOLS.

Fourth Reader.
Intermediate Reader.
Fifth Reader.
Bradbury's Eaton's Practical Arithmetic.
Patterson's Grammar.
Hyde Lessons in English.
Swinton's Elementary Geography.
Swinton's Grammar School Geography, New England Edition.
Scudder's Short History of the United States.
Scudder's History of the United States.
Worcester's New Pronouncing Spelling Book.
Worcester's Comprehensive Dictionary.
Thompson's Intellectual Arithmetic.
Spencerian Writing Books.
Prang's Drawing Books.
Goodrich's Child's Book of United States History.
Intermediate Music Reader.
Fourth Abridged Music Lessons.

HIGH SCHOOL.

Allen and Greenough's Latin Grammar.
Leighton's Latin Lessons.
Allen and Greenough's Cæsar.
Allen and Greenough's Virgil.
Allen and Greenough's Cicero.
Allen and Greenough's Ovid.
Allen's Latin Composition.
White's Latin Lexicon.
Goodwin's Greek Grammar.
White's Greek Lessons.
Goodwin's Greek Reader.
Homer.
Liddell and Scott's Greek Lexicon (abridged).
Bocher's Otto's French Grammar.
Bocher's Otto's French Reader.
Fisher's Easy French Readings.
Bocher's College Plays.
Heath's French Dictionary.
Otto's German Grammar.
Otto's German Reader.
Methode Berlitz.
Adler's German Dictionary.
Eaton's Practical Arithmetic.
Wentworth's High School Arithmetic.
Eaton's Algebra.
Bradbury's Trigonometry.
Davies' Surveying.
Meiklejohn's English Grammar.
Lockwood's Lessons in English Compositions.
Class Book of Prose and Poetry.
Kellogg's Rhetoric.
Arnold's English Literature.
Underwood's Hand-Book of American Authors.
Selected American Poems.
Selected Ballads and Lyrics.
Swinton's Outlines of History.
Curnow's History of England.
Leighton's History of Rome.
Pennell's History of Greece.
Pennell's History of Rome.
Martin's Civil Government.
Winslow's Intellectual Philosophy.
Cooley's Natural Philosophy.
Avery's Natural Philosophy.
Sharpless & Phillips' Astronomy.
Avery's Chemistry.
Eliot and Storer's Manual of Chemistry.
Eliot and Storer's Qualitative Analysis.
Dana's Geological Story.
Gray's Botany.
Walker's Physiology.
Warren's Physical Geography.
Tozer's Classical Geography.
Meservey's Book-keeping.
Eichberg's Music Reader.
Upton's Infantry Tactics.
Steward's Elementary Physics.
Todhunter's Algebra.
Wentworth's Geometry.
Bryce's Æneid (last six books).

D.

COURSE OF STUDY FOR THE PRIMARY SCHOOLS.

FIRST YEAR.

FIRST HALF — Munroe's Charts and Franklin First Reader. Begin with words written upon the blackboard, using the names of familiar objects, and words expressing familiar acts.

Combine words into groups and sentences.

Pay particular attention to *tones* and *inflection*.

Spell the words in columns, by sounds.

Develop the idea of number to ten, by the use of objects. Count to one hundred on the numeral frame.

Teach the construction of letters and figures, and the simplest form of script letters, using slate and blackboard.

SECOND HALF — Monroe's Charts, and First Reader. Spell by sounds.

Write words, groups of words, and sentences upon the blackboard, and require pupils to copy upon the slate. Give special attention to the forms of the letters.

Add and subtract small numbers, using numeral frame and objects.

Teach Roman numerals to L.

Follow the Grube Method in numbers as far as to 4.

Practice object teaching, using such objects as are familiar to the child.

SECOND YEAR.

FIRST HALF — Second Reader. Practice "Enunciation Exercises" daily.

Spell, by letters and by sounds, words in columns and in reading lessons.

Teach the simplest form of script letters.

Teach Arithmetic orally. Grube Method as high as 8.

Teach Roman numerals to M.

SECOND HALF — Second and Third Readers. Practice "Enunciation Exercises" daily.

Continue to teach the simplest form of script letters, and write sentences from dictation upon the slate.

Teach Arithmetic, using the Franklin Primary, and see that the pupils read the questions fluently and correctly before solving them. Teach multiplication table to 8 x 8.

THIRD YEAR.

First Half — Third Reader. Daily practice of exercise in enunciation. Spell words in columns and in reading lessons, by letters and by sounds. Teach the meaning of the words found in the reading lessons, and require scholars to use their own language in defining. Correct all faults in expression.

Teach all script letters, and require words and sentences to be written from dictation, upon paper.

Review the Arithmetic taught during the second year, by oral questions similar to those in the text-books, and advance as far as practicable. Teach multiplication table as far as 10 x 10.

Second Half — Third Reader; continue exercises in enunciation, spelling, definitions, etc.

Language Lessons.

Review and complete the Arithmetic. Teach multiplication table to 12 x 12.

Drawing should be taught in all the classes except first half of first year. In drawing and singing, follow the directions of the special teachers.

In each school a few minutes should be devoted at every session to physical exercises.

Monroe's Charts may be used at pleasure throughout the course.

E.

GRAMMAR SCHOOLS.

FOURTH YEAR.

Reading — Fourth Reader. Especial attention should be given the Introductory Exercises and the lessons in spelling and defining at the beginning of each reading lesson.

Spelling — Worcester's New Pronouncing Speller. First Half, to page 29. Second Half, from page 29 to 47.

Arithmetic — From dictation; numeration and notation, addition and multiplication; amounts not to exceed a million. Second Half, from dictation; numeration and notation; addition and multiplication, subtraction and long division, not to exceed three periods. In subtraction, not more than two figures in the minuend to be less than the figures below them and in division the divisor not to exceed 25.

LANGUAGE — Hyde's Lessons in English. First Half, to page 57; Second Half, from page 57 to 114.

GEOGRAPHY — Swinton's Elementary. First Half, to page 40; Second Half, from page 40 to 64.

HISTORY — Child's Book of History as a reader.

MENTAL ARITHMETIC — Thompson's Intellectual. Omit subtraction. First Half, to page 31; Second Half, including subtraction, from page 31 to 38.

FIFTH YEAR.

READING — Fourth Reader, with daily drill on Introductory Exercises, spelling and defining.

SPELLING — Worcester's New Pronouncing Speller. First Half, from page 47 to 69; Second Half, from page 69 to 93.

ARITHMETIC — Bradbury's Eaton's Practical. First Half, to page 60; Second Half, from page 60 to 87.

LANGUAGE — Hyde's Lessons in English. First Half, from page 114 to 129; Second Half, Review.

GEOGRAPHY — Swinton's Elementary Geography. First Half, from page 64 to 82; Second Half, from page 82 to end.

HISTORY — Scudder's Short History as a reader.

MENTAL ARITHMETIC — Thompson's Intellectual. First Half, to page 42; Second Half, from page 42 to 65.

SIXTH YEAR.

READING — Franklin Intermediate, with drill on Introductory Exercises daily. Spelling and defining.

SPELLING — Worcester's New Pronouncing Speller. First Half, from page 93 to 111; Second Half, from page 111 to 125.

ALITHMETIC — Bradbury's Eaton's Practical. First Half, from page 89 to 102; Second Half, from page 102 to 134.

GRAMMAR — Patterson's Elements. First Half, page 28; Second Half from page 28 to page 46.

GEOGRAPHY — Swinton's Grammar School Geography. First Half, to page 24; Second Half, from page 24 to 50.

HISTORY — Scudder's Short History as a reading book.

MENTAL ARITHMETIC — Thompson's Intellectual. First Half, from page 60 to 80; Second Half, omitting compound numbers, from page 80 to 108.

SEVENTH YEAR.

READING — Franklin Intermediate Reader, with driil on exercises to secure distinct articulation and correct pronounciation and expression.

SPELLING—Worcester's New Pronouncing Speller. First Half, from page 125 to 135; Second Half, from page 135 to 145.

ARITHMETIC—Bradbury's Eaton's Practical. First Half, from page 134 to 160; Second Half, from page 160 to 180.

GRAMMAR—Patterson's Elements. First Half, from page 46 to 76; Second Half, from page 76 to 117.

GEOGRAPHY—Swinton's Grammar School. First Half, from page 50 to 70; Second Half, from page 70 to 86.

HISTORY—Scudder's History of the United States, to be taught "by reading and familiar conversation." First Half, to page 65; Second Half, from page 65 to 143.

MENTAL ARITHMETIC—Thompson's Intellectual. First Half, from page 90 to 108; Second Half, omitting interest, etc., from page 108 to 127.

EIGHT YEAR.

READING—Fifth Reader, with drill on Introductory Treatise. Spelling and definitions.

SPELLING—Worcester's New Pronouncing Speller. First Half, from page 145 to 155; Second Half, from page 155 to 163.

ARITHMETIC—Bradbury's Eaton's Practical. First Half, from page 180 to 204; Second Half, from page 204 to 229.

GRAMMAR—Patterson's Elements. First Half, from page 117 to 138; Second Half, from page 138 to 166.

GEOGRAPHY—Swinton's Grammar School. First Half, from page 86 to 102; Second Half, from page 102 to the end.

HISTORY—Scudder's History of the United States. First Half, from page 143 to 239; Second Half, from page 239 to 329.

MENTAL ARITHMETIC—Thompson's Intellectual. First Half, omitting Bank Discount, from page 117 to 126; Second Half from page 123 to 133.

NINTH YEAR.

READING — Fifth Reader, systematic teaching of the Introductory Treatise.

SPELLING — Worcester's New Pronouncing Speller. First Half, from page 163 to end; Second Half, review whole book.

ARITHMETIC — Bradbury's Eaton's Practical. First Half, from page 229 to 263; Second Half, review from beginning.

GRAMMAR — Patterson's Elements. First Half, from page 166 to end; Second Half, review from beginning.

GEOGRAPHY — Swinton's Grammar School. Review from beginning.

HISTORY — Scudder's History of the United States. First Half, from page 329 to 433; Second Half, review from beginning.

MENTAL ARITHMETIC — Thompson's Intellectual. First Half, from page 133 to end; Second Half, review from beginning.

GENERAL DIRECTIONS.

In Arithmetic, mental work to accompany written work daily.

In Geography, discriminate between the important and unimportant details in assigning lessons. Use as reading lessons in the Grammar School Geography, the separate States, the separate countries of South America, of Europe, of Asia and of Africa.

Spell and define words in the various text-books. Oral spelling should be combined with written spelling, but the latter should predominate. In all spelling exercises pronounce the word but *once*, to induce habits of attention.

Teachers will make frequent reviews of their own work, and also of *the work of preceding years*, for which they will be held responsible in examinations.

Declamations once a month by boys of First and Second Classes.

Compositions each week in every class. Elements of Book-keeping, Writing, Drawing and Music throughout the entire course.

F.

HIGH SCHOOL.

ENGLISH COURSE

FIRST YEAR.

First Term.	*Second Term.*
Algebra.	Algebra.
Outlines of History.	English History.
English Lessons.	English Lessons.

SECOND YEAR.

First Term.	*Second Term.*
Geometry.	Geometry.
Natural Philosophy.	Natural Philosophy.
Physical Geography.	Chemistry.
French.	English Grammar.
	French.

THIRD YEAR.

First Term.	*Second Term.*
Arithmetic.	Physiology.
Rhetoric.	Political Science.
Chemistry.	Geology.
French.	French.

CLASSICAL COURSE.

FIRST YEAR.

First Term.	*Second Term.*
Algebra.	Algebra.
Latin.	Latin.
English Lessons.	Natural Philosophy.

SECOND YEAR.

First Term.	*Second Term.*
Cæsar.	Cæsar.
Geometry.	Geometry.
Natural Philosophy.	Chemistry.
French.	French.

THIRD YEAR.

First Term.	*Second Term.*
Virgil.	Virgil.
Rhetoric.	Political Science.
Chemistry.	Geology.
French.	French.

FOURTH YEAR.

First Term.	*Second Term.*
Cicero.	Cicero.
Astronomy.	Botany.
Literature.	Literature.
German.	German.

COLLEGE COURSE.

FIRST YEAR.

First Term	*Second Term.*
Algebra.	Algebra.
Latin.	Latin.
Greek History.	Roman History.

SECOND YEAR.

First Term.	*Second Term.*
Cæsar.	Cæsar.
Geometry.	Geometry.
Greek.	Greek Reader.

THIRD YEAR.

First Term.	*Second Term.*
Cicero.	Cicero.
Greek Reader.	Xenaphon.
Mathematics.	Mathematics.

FOURTH YEAR.

First Term.	*Second Term.*
Virgil.	Virgil.
Xenaphon.	Herodotus.
Physics.	Physics.

FIFTH YEAR.

First Term.	*Second Term.*
Virgil and Nepos (at sight).	Latin Reviews.
Homer.	Greek Reviews.
French.	French.

NOTE A — Each scholar is expected to pursue three regular studies; any change from this rule must be subject to the approval of the principal.

NOTE B — Composition, Declamation, Reading, Music and Military Instruction are required throughout the course.

NOTE C — Book-keeping is elective.

SUMMARY OF THE ANNUAL RETURNS

OF THE

Public Schools of the City of Lowell, for the Year Ending December 19, 1890.

	SCHOOL.	LOCATION.	Number of pupils belonging December 19, 1890.			Whole No. of pupils on time books since Jan. 1, 1890.			Average No. of pupils belonging to school.			Average daily attendance.			No. entered, not received from any other public school.	Received from other public schools of lower grade.	Received from other public schools of same grade.	Sent to other public schools of higher grade.	Sent to other public schools of same grade.	Number having certificates of schooling for mills.	Number over fourteen years of age.	Number between ten and fourteen years of age.	Number between six and ten years of age.	No. under six years of age.	Per cent. of attendance.
			Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.												
High		Kirk and Anne Streets	210	241	451	301	343	644	265	269	474	252	198	450	18	183	5	....	....	....	625	19	....	....	95
Bartlett Sch. Dis.	Bartlett (Gram.)	Cor. Clark St. and Hancock Ave.,	150	124	274	218	209	427	149	137	286	136	122	258	35	55	16	30	25	11	124	273	30	....	90
	PRIMARIES.																								
	Cross St.	Cross St., near Mt. Vernon St.	53	74	127	89	110	199	54	65	119	49	59	108	38	....	32	16	28	....	....	24	157	18	90
	Morrill	Common and Adams Sts.	133	88	221	197	166	363	107	90	197	98	82	180	114	...	26	38	24	9	10	90	231	32	92
	School St.	School St., bet. Pawtucket & Bowers	46	46	92	94	83	177	53	52	105	47	46	93	40	...	11	20	28	....	....	30	136	10	89
		Totals for Primaries	232	208	440	380	359	739	214	207	421	194	187	381	198	....	69	74	80	9	10	144	525	60	
Butler Sch. Dis.	Butler (Gram.)	Gorham Street	240	202	442	326	272	598	234	203	437	212	182	394	31	139	18	31	14	37	116	445	37	....	91
	PRIMARIES.																								
	Agawam St.	Cor. Agawam and Barrington Sts.,	77	61	138	115	98	213	78	60	138	71	54	125	81	....	14	31	8	2	1	48	141	23	90
	Carter St.	Carter Street	67	60	127	103	99	202	60	63	123	55	58	113	52	....	17	32	22	....	1	37	153	11	90
	London St.	Cor. London and West Sts.	39	39	78	92	94	186	56	54	110	49	47	96	105	....	14	34	14	....	1	32	124	29	87
	Lyon St.	Cor. Central and Lyon Sts.	88	89	177	137	141	278	82	92	174	76	80	156	66	....	16	35	23	....	2	56	185	35	90
	Weed St.	Cor. Gorham and Weed Sts.	38	29	67	60	51	111	39	34	73	35	31	66	23	....	10	25	2	....	....	25	73	13	90
		Totals for Primaries	309	278	587	507	483	990	315	303	618	286	270	556	327	....	71	157	69	2	5	198	676	111	89

Colburn Sch. Dis.	Colburn (Gram)	Lawrence Street	201	140	341	290	206	496	191	134	325	173	120	293	26	110	26	11	17	29	86	359	51	....	90
	PRIMARIES.																								
	Ames St.	Cor. Lawrence and Ames Sts.	79	78	157	121	123	244	81	77	158	75	69	144	61	....	24	25	28	....	2	60	149	33	92
	Central St.	Central St., opposite Hudson	69	80	149	125	139	264	78	94	172	68	80	148	56	....	18	29	25	4	4	61	149	50	86
	Chapel St.	Chapel St., opposite Pollard	46	40	86	64	62	126	47	45	92	44	41	85	122	....	4	20	14	....	....	15	101	110	92
	Charles St.	Charles St., near Gorham	71	77	148	123	112	235	71	67	138	62	58	120	73	....	20	20	20	2	1	33	168	33	88
	Training Sch.	Charles St., near Lawrence	103	84	187	183	157	340	111	87	198	94	74	168	80	....	41	47	26	6	7	62	216	55	85
	Cottage St.	Cor. Chapel and Cottage Sts.	34	30	64	61	42	103	31	26	57	27	22	49	19	....	12	9	11	1	1	36	59	7	86
		Totals for Primaries	402	389	791	677	635	1312	419	396	815	370	344	714	411	....	119	150	124	13	15	287	842	288	88
Edson Sch. Dis.	Edson (Gram.)	Cor. South and Highland Sts.	235	231	466	324	321	645	226	230	456	207	208	415	21	19	28	15	14	15	120	421	95	....	91
	PRIMARIES.																								
	Eliot	Cor. Favor and Summer Sts.	84	88	172	189	167	356	91	93	184	83	83	166	97	....	44	42	39	6	7	87	232	30	91
	Howard St.	Howard St., near Hale	53	66	119	143	159	302	81	93	174	74	79	153	64	....	36	33	51	2	3	51	197	51	88
		Totals for Primaries	137	154	291	332	326	658	172	186	358	157	162	319	161	....	80	75	90	8	10	138	429	81	89
Green Sch. Dis.	Green (Gram.)	Merrimack St., opposite Colburn,	214	194	408	304	294	598	194	183	377	175	167	342	61	87	31	26	22	24	161	369	68	....	91
	PRIMARIES.																								
	Cabot St.	Cor. Cabot and Ford Sts.	130	83	213	281	220	501	122	90	212	110	75	185	232	....	20	26	29	25	3	211	203	84	88
	Cheever St.	Cor. Cheever and Tucker Sts.	113	66	179	205	117	322	124	60	184	111	56	167	301	....	21	....	14	3	7	111	181	33	91
	Kirk Street	Cor. Kirk and Lee Sts.	51	59	110	96	99	195	49	54	103	45	48	93	60	....	30	33	66	....	....	36	138	21	90
	Worthen St.	Worthen St., bet. B'dway & Market	93	71	164	190	158	348	99	77	176	86	64	150	143	....	47	38	36	5	5	80	208	55	84
		Totals for Primaries	387	279	666	772	594	1366	394	281	675	352	243	595	736	....	118	97	95	33	15	438	730	193	88
Highland Sch. Dis.	Highland (Gm.)	Pine Street	277	293	570	390	436	826	270	300	570	246	269	515	45	139	32	50	33	23	265	487	74	....	90
	PRIMARIES.																								
	Dover St.	Dover St., near Grove	61	70	131	102	104	206	66	70	136	59	62	121	53	....	8	50	9	....	....	6	167	33	89
	Franklin	Cor. Middlesex and Branch Sts.	106	91	197	195	165	360	103	93	196	94	81	175	84	....	43	40	38	1	9	108	220	23	89
	Middlesex Vil.,	Middlesex Vil., near 954 Midd'x St.	18	16	34	30	23	53	20	15	35	18	13	31	49	....	4	7	4	1	....	9	31	9	89
	Plain St.	Cor. Plain and Chelmsford Sts.	63	54	117	87	86	173	55	54	109	47	47	94	44	....	21	22	14	....	....	24	136	13	87
	Powell St.	Powell St., near Liberty	48	40	88	89	77	166	52	43	95	47	39	86	44	....	26	36	10	....	....	33	123	10	91
		Totals for Primaries	296	271	567	503	445	958	296	275	571	265	242	507	274	....	105	155	75	2	9	180	677	88	89
Moody Sch. Dist.	Moody (Gram.)	Cor. High and E. Merrimack Sts.	145	123	268	203	192	395	145	133	278	133	119	252	35	58	26	20	18	5	98	245	52	....	91
	PRIMARIES.																								
	Fayette St.	Fayette St., bet. Chestnut & Everett	41	36	77	109	96	205	48	39	87	43	34	77	59	....	23	13	26	6	....	57	130	18	88
	High St.	High St., bet. Chestnut and Everett	33	33	66	67	62	129	34	30	64	32	25	57	31	....	19	25	18	....	2	18	89	20	89
	Pond St.	Cor. High and Pond Sts.	41	46	87	64	81	145	38	39	77	34	35	69	47	....	23	14	4	....	2	18	89	36	90
	Sycamore St.	Sycamore St., below Shep. Garden,	7	12	19	19	23	42	9	13	22	8	11	19	34	....	8	1	7	....	1	12	18	12	86
		Totals for Primaries	122	127	249	259	262	521	129	121	250	117	105	222	171	....	73	53	55	6	5	105	326	86	88

SUMMARY OF THE ANNUAL RETURNS OF THE PUBLIC SCHOOLS—Concluded.

	SCHOOL.	LOCATION.	Number of pupils belonging December 19, 1890.			Whole No. of pupils on time books since Jan. 1, 1890.			Average No. of pupils belonging to school.			Average daily attendance.			No. entered, not received from any other public school.	Received from other public schools of lower grade.	Received from other public schools of same grade.	Sent to other public schools of higher grade.	Sent to other public schools same grade.	Number having certificates of schooling for mills.	Number over fourteen years of age.	Number between ten and fourteen years of age.	Number between six and ten years of age.	No. under six years of age.	Per cent. of attendance.
			Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.												
Pawt. Sch. Dis.	Pawtuck. (Gm.)	Mammoth Road (Pawtucketville)	89	88	177	120	103	223	78	76	154	72	71	143	24	40	16	13	8	3	59	129	26	....	92
	PRIMARIES.																								
	Mammoth R'd.,	Mammoth Road (Pawtucketville)	70	53	123	109	100	209	72	57	129	66	53	119	65	. ..	13	36	15	....	....	21	165	23	92
	Varnum Ave.,	Varnum Avenue (Pawtucketville)	7	2	9	9	5	14	4	2	6	4	1	5	12	....	2	....	3	....	1	8	4	1	83
		Totals for Primaries . .	77	55	132	118	105	223	76	59	135	70	54	124	77	...	15	36	18	....	1	29	169	24	87
Varnum Sch. Dis.	Varnum (Gm.)	Myrtle & Beach Sts. (Centralville)	209	215	424	341	286	627	231	203	434	211	183	394	35	112	36	24	26	36	156	441	30	....	91
	PRIMARIES.																								
	Fourth St. .	Fourth St., over Engine House .	12	29	41	45	56	101	21	26	47	19	25	44	34	....	9	22	8	1	....	14	73	14	94
	River St. .	River St., near Aiken St. Bridge,	85	75	160	222	156	378	91	81	172	81	72	153	103	....	58	30	47	3	5	117	232	224	90
	Tenth St. .	Cor. Tenth and Varnum Sts. .	81	99	180	154	158	312	89	90	179	81	76	157	73	....	41	54	34	1	....	67	229	16	88
	West Sixth St.,	West Sixth St., near Coburn .	95	67	162	213	133	346	121	73	194	107	65	172	78	....	40	33	27	9	11	98	229	8	88
		Totals for Primaries . .	273	270	543	634	503	1137	322	270	592	288	238	526	298	....	148	139	116	14	16	196	763	262	90
	High School		210	241	451	301	343	644	265	209	474	252	198	450	18	183	5	...	....	....	625	19	....	....	95
	Grammar Schools		1760	1610	3370	2516	2319	4835	1718	1599	3317	1565	1441	3006	313	759	229	220	127	153	1185	3169	463	....	90
	Primary, Mixed and Training Schools . . .		2235	2031	4266	4182	3722	7904	2237	2098	4435	2099	1845	3944	2853	....	795	936	722	87	86	1711	5137	1021	88
	Totals		4205	3882	8087	6999	6384	13383	4220	3906	8226	3916	3484	7400	3184	942	1029	1156	899	240	1296	4899	5500	1021	91

AUDITOR'S

FIFTY-FIFTH ANNUAL REPORT

OF THE

RECEIPTS AND EXPENDITURES

OF THE

CITY OF LOWELL, MASS.

TOGETHER WITH THE

TREASURER'S ACCOUNT AND THE ACCOUNT OF THE COMMISSIONERS OF SINKING FUNDS, FOR THE FINANCIAL YEAR ENDING DECEMBER 31, 1890.

LOWELL, MASS.
VOX POPULI PRESS, 130 CENTRAL STREET.
1891.

CITY OF LOWELL.

IN BOARD OF ALDERMEN, Jan. 20, 1891.

Read and sent down to the Common Council.

MICHAEL J. DOWD,
City Clerk.

IN COMMON COUNCIL, Jan. 20, 1891.

Read and ordered on file, in concurrence.

DAVID CHASE,
Clerk.

AUDITOR'S REPORT

OF THE

RECEIPTS AND EXPENDITURES,

FOR THE YEAR ENDING DEC 31, 1890.

AUDITOR'S REPORT.

CITY OF LOWELL,

AUDITOR'S OFFICE, JAN. 16, 1891.

TO THE CITY COUNCIL:

Gentlemen. — In conformity with the requirements of the ordinances of the City, I have the honor to present the Fifty-fifth Annual Report of the Receipts and Expenditures of the City of Lowell for the financial year ending Dec. 31, 1890, exhibiting the same as classified in the several Department Accounts, with a schedule of the Real and Personal Property belonging to the City, and a statement of the City Debt and Debts due the City.

RECEIPTS.

The whole amount of money received into the Treasury from all sources, from Jan. 1 to Dec. 31, 1890, was		$3,634,949 62
Of this amount there was received on account of		
Taxes of 1886	$ 22 40	
Taxes of 1887	240 64	
Taxes of 1888	25,456 54	
Taxes of 1889	81,587 96	
Taxes of 1890	955,911 03	
Amount carried forward	$1,063,218 57	

Amount brought forward	$1,063,218 57	
Schools	36,160 64	
School-houses	25,157 48	
Roads and Bridges	54,741 57	
Reserved Fund	12,707 09	
Paupers	10,709 42	
Police	19,716 05	
Fire Department	20,560 00	
Sewers and Drains	11,202 50	
Commons	6,323 00	
Lighting	36 50	
Public Buildings	9,961 13	
City Hall Building Lot	42 00	
Library	3,781 40	
Health	6,666 00	
Water Works	193,963 80	
Palmer Street Extension	335 15	
Pawtucket Boulevard	1 75	
Water Loan Sinking Fund	34,772 23	
City Hall and Memorial Building	95,000 00	
City Hall and Memorial Building Sinking Fund	6,080 83	
State Aid	11,751 00	
Aid for Indigent Soldiers and Sailors,	4,030 50	
Interest	9,884 89	
City Debt	1,362,073 37	
National Bank Tax	5,269 72	
Abatement of Taxes	36 00	
Temporary Loans	575,000 00	
Fund for Ordinary City Debt	55,767 03	
		$3,634,949 62

EXPENDITURES.

The whole amount expended and ordered to be paid from the Treasury, from Jan. 1 to Dec. 31, 1890, was		$3,613,584 04
The expenditures are charged to the following appropriations or accounts:		
Schools	$196,587 48	
School-houses	82,732 93	
Amount carried forward	$279,320 41	

Amount brought forward	$279,320 41	
Roads and Bridges	125,302 59	
Reserved Fund	46,849 95	
Paupers	66,214 38	
Police	99,839 32	
Fire Department	99,928 19	
Sewers and Drains	26,801 55	
Improvement of Andover Street Sewer System	3,375 05	
Commons	15,159 23	
Printing and Advertising	6,890 16	
Lighting	56,286 88	
Public Buildings	25,513 94	
Library	15,825 55	
Health	31,439 86	
Water Works	194,108 32	
Palmer Street	21,712 86	
Palmer Street Extension	3,010 48	
Pawtucket Boulevard	25,563 84	
Salaries	23,442 71	
Water Loan Sinking Fund (new account)	34,772 23	
City Hall and Memorial Building	72,573 55	
City Hall and Memorial Building Sinking Fund	6,080 83	
State Aid	13,065 50	
Aid for Indigent Soldiers and Sailors	8,349 00	
Interest	77,731 86	
City Debt	1,393,700 00	
National Bank Tax	22,403 74	
State Tax	55,316 39	
County Tax	45,922 74	
Abatement of Taxes	17,440 55	
Temporary Loans	575,000 00	
Fund for Ordinary City Debt	55,742 38	
Sinking Fund for Water Debt	25,000 00	
Sinking Fund for Loan of 1880	4,000 00	
Sinking Fund for Loan of 1882	2,500 00	
Aiken Street Sinking Fund	16,000 00	
Sinking Fund for High Service Water Supply	1,800 00	
Sinking Fund for New Buildings at City Farm	5,000 00	
Central Bridge Sinking Fund	9,600 00	
Intercepting Sewer Fund	5,000 00	
		$3,613,584 04

The whole amount of receipts, during the year 1890, was	$3,634,949 62	
The whole amount of expenditures, during the year 1890, was	3,613,584 04	
Excess of receipts over expenditures		$21,365 58
The balance in the treasury, Jan. 1, 1890, was	$ 68,168 50	
The amount received into the treasury, during the year 1890, was	3,634,949 62	
Making a total of	$3,703,118 12	
The amount paid from the treasury, during the year 1890, was	3,613,584 04	
The balance in the treasury Dec. 31, 1890, was		$89,534 08

CITY DEBT.

The amount of the city debt, Jan. 1, 1890, was		$3,461,700 00
The City Debt has been increased during the year as follows:		
By the amount of a note given to the Lowell Institution for Savings, dated July 18, 1890, payable one-tenth annually, with interest at the rate of four per cent. per annum, payable semi-annually	$35,000 00	
By the amount of a note given to the Lowell Institution for Savings, dated Nov. 29, 1890, payable one-tenth annually, with interest at the rate of four per cent. per annum, payable semi-annually	46,000 00	
Amounts carried forward	$81,000 00	$3,461,700 00

Amounts brought forward.....	$81,000 00	$3,461,700 00
By the amount of a note given to the Commissioners of Sinking Funds, dated Dec. 23, 1890, payable one-tenth annually, with interest at the rate of four per cent. per annum, payable semi-annually	50,000 00	
By the amount of ninety-five $1,000 City Hall and Memorial Building Bonds, sold to Barnard & Stanwood, dated Oct. 1, 1890, payable in thirty years from date, with interest at the rate of four per cent. per annum, payable semi-annually.....	95,000 00	
By the amount of six hundred $1,000 Water Loan Bonds, sold to Barnard & Stanwood, dated Nov. 1, 1890, payable in thirty years from date, with interest at the rate of four per cent. per annum, payable semi-annually.....	600,000 00	
		826,000 00
		$4,287,700 00
There have been paid on account of the City Debt, during the year 1890, notes and bonds as follows:		
To Perkins, Dupee & Co., bonds which matured May 1, 1890.....	$ 7,500 00	
To Perkins, Dupee & Co., bonds which matured June 20, 1890.....	15,000 00	
To Lowell Institution for Savings, an instalment on a note dated Dec. 15, 1883.....	8,500 00	
To Lowell Institution for Savings, an instalment on a note dated Dec. 15, 1883.	7,700 00	
Amounts carried forward	$38,700 00	$4,287,700 00

Amounts brought forward.....	$38,700 00	$4,287,700 00
To Commissioners of Sinking Funds, an instalment on a note dated July 1, 1884.....	1,650 00	
To Commissioners of Sinking Funds, an instalment on a note dated Aug. 4, 1884.....	7,500 00	
To Lowell Institution for Savings, an instalment on a note dated Jan. 15, 1885.....	3,000 00	
To Commissioners of Sinking Funds, an instalment on a note dated July 24, 1885.....	3,500 00	
To Commissioners of Sinking Funds, an instalment on a note dated Sept. 19, 1885.....	2,000 00	
To Commissioners of Sinking Funds, an instalment on a note dated Sept. 19, 1885.....	1,500 00	
To Commissioners of Sinking Funds, an instalment on a note dated Dec. 3, 1885.....	3,000 00	
To Commissioners of Sinking Funds, an instalment on a note dated Aug. 11, 1887.....	5,000 00	
To Commissioners of Sinking Funds, an instalment on a note dated Oct. 14, 1887.....	2,000 00	
To Commissioners of Sinking Funds, an instalment on a note dated Dec. 2, 1887.....	2,000 00	
To Lowell Institution for Savings, an instalment on a note dated Aug. 1, 1888.....	6,000 00	
To Dupee & Sargent, an instalment on a note dated Aug. 7, 1888.. ..	5,000 00	
Amounts carried forward	$80,850 00	$4,287,700 00

Amounts brought forward	$80,850 00	$4,287,700 00
To Commissioners of Sinking Funds, an instalment on a note dated Sept. 1, 1888.....	7,950 00	
To Lowell Institution for Savings, an instalment on a note dated Dec. 1, 1888.....	4,000 00	
To F. S. Moseley & Co., an instalment on a note dated Dec. 21, 1888..	5,400 00	
To Lowell Institution for Savings, an instalment on a note dated March 4, 1889.....	4,000 00	
To Lowell Institution for Savings, an instalment on a note dated May 22, 1889.....	2,500 00	
To Lowell Institution for Savings, an instalment on a note dated June 3, 1889.....	3,000 00	
To Blake Bros. & Co., bonds which matured Dec. 1, 1890.....	22,000 00	
To Lowell Institution for Savings, a note which matured March 25, 1890.....	50,000 00	
To Sundry Persons, City of Lowell Water Loan Bonds which matured Nov. 1, 1890.....	1,214,000 00	
		1,393,700 00
The amount of the City Debt, Jan. 1, 1891.....		$2,894,000 00
Decrease in the City Debt, during the year 1890.....		$567,700 00

The amount of the City Debt, on account of the Water Works, Jan. 1, 1890	$1,828,000 00	
This has been increased during the year 1890, by the amount of bonds sold	600,000 00	
	$2,428,000 00	
There has been paid on account of the same, during the year 1890	1,217,000 00	
	$1,211,000 00	
The amount of the Sinking Funds for the reduction of the same, Jan. 1, 1891	53,873 80	
Net City Debt on account of Water Works, Jan. 1, 1891		*$1,157,126 20
The amount of the Ordinary City Debt, Jan. 1, 1890	$1,633,700 00	
This has been increased during the year 1890, by the amount of notes given	226,000 00	
	$1,859,700 00	
There has been paid on account of the same, during the year 1890	176,700 00	
	$1,683,000 00	
The amount of the Sinking Funds, for reduction of the same, Jan. 1, 1891	679,357 61	
Net Ordinary City Debt, Jan. 1, 1891,		1,003,642 39
Total Net Debt of the City, Jan. 1, 1891		$2,160,768 59
Amount carried forward		$2,160,768 59

* This amount should be reduced by the sum of $86,000 00, which was borrowed, and is now in the treasury, for the payment of Water Bonds which matured Nov. 1, 1890, and which have not been presented for payment.

Amount brought forward.....	$2,160,768 59
Total Net Debt of the City, Jan. 1, 1890.....	*2,136,117 49
Increase in the Net Debt of the City, during the year 1890..... ..	$24,651 10

Respectfully submitted,

DAVID CHASE,

Auditor of Accounts.

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* This amount should be reduced by the sum of $86,000.00, which was borrowed, and is now in the treasury, for the payment of Water Bonds which matured Nov. 1, 1890, and which have not been presented for payment.

Appropriations and Expenditures.

The Amount of the several Appropriations made by the City Council during the Year — The Amount of the Unexpended Balance of 1889 — The Transfers from one Appropriation to another — The Amount Received into the Treasury from all Sources — The Expenditures in Detail under each Appropriation, and the Undrawn Balances, Dec. 31, 1890 — Also, the Amount of the City Debt — Debts Due the City — Schedules of Real and Personal Property, Etc.

SCHOOLS.

Appropriated and assessed in 1890.....	$160,000 00	
		$160,000 00

RECEIPTS.

Received into the Treasury on account of SCHOOLS:

From Appropriation for Water Works, for refund of water rates....	$ 4 20	
Appropriation for Reserved Fund for coal.....	11 76	
Appropriation for Fire Department, for coal.....	68 05	
Appropriation for Lighting, for coal	11 83	
Appropriation for Health, for coal,	8 56	
Jesse M. Abbott, for book destroyed	94	
Geo. F. Lawton, for damage to books.....	3 07	
Mary F. Carleton, for overdraft,	60 00	
Estate of F. A. Hildreth, for over draft	4 11	
Marion J. Keyes, for overdraft..	60 00	
Grace Scribner, for overdraft...	8 12	
Commissioners of Sinking Funds, on loan.....	35,000 00	
The following persons for TUITION:		
From Annie R. Baker.....	60 00	
Katharine F. Baker.....	10 00	
Amounts carried forward	$35,310 64	$160,000 00

Amounts brought forward		$35,310 64	$160,000 00
The following persons for TUITION:			
From Clement C. Bartlett		10 00	
Emma M. Bartlett		40 00	
Fanny A. Chase		30 00	
Children of G. A. Chase		8 00	
Sheldon E. Chase,		12 00	
William A. Chase		12 00	
Frank W. Cheney		6 00	
Alice Connell		20 00	
Geo. H. Connell		20 00	
Laura J. Connell		20 00	
Victor Cutter		30 00	
Fleta Foster		40 00	
Frank G. Gulliland		40 00	
Geo. F. Hagerman		40 00	
Emma M. Huntley		20 00	
Edward Pickering		20 00	
Henry E. Pickering		40 00	
Nellie G. Pickering		20 00	
Boyden H. Pillsbury		60 00	
George B. Pillsbury		60 00	
Justus Richardson		30 00	
Lester G. Richardson		12 00	
Harry B. Sewell		60 00	
Edward W. Shay		20 00	
H. C. Thissell		20 00	
J. Parker Varnum		30 00	
Grace A. Washburn		60 00	
Joseph Whelton		20 00	
Annie Woodworth		30 00	
Town of Tyngsborough		20 00	
			36,160 64

TRANSFERS.

From Appropriation for School-houses		$412 20	
Appropriation for Reserved Fund,		14 64	
			426 84
			$196,587 48

EXPENDITURES.

Paid SUPERINTENDENT OF PUBLIC SCHOOLS:

To George F. Lawton, salary	$2,600 00		
			$2,600 00

Paid for INSTRUCTION:

HIGH SCHOOL.

To Frank F. Coburn, Principal	$2,200 00		
Frank B. Sherburne	1,800 00		
Cyrus W. Irish	1,800 00		
George E. Worthen, Military Instructor	250 00		
Mary A. Webster	800 00		
Marietta Melvin	593 25		
Elizabeth McDaniels	700 00		
Harriet C. Hovey	700 00		
Charlotte E. Draper	700 00		
Alice J. Chase	696 50		
Susie L. D. Watson	700 00		
Adelaide Baker	700 00		
Jennie L. Allen	700 00		
Maud Hadley	700 00		
Emma L. Bradley	444 75		
Emma M. Huntley	160 00		
Marietta W. Cassidy	120 75		
Alice B. Dexter	24 50		
Gertrude A. Rodliff	240 00		
			14,029 75

GRAMMAR SCHOOLS.

BARTLETT SCHOOL.

To Samuel Bement, Principal	$1,800 00		
Marianne B. Kent	600 00		
Abby E. French	597 50		
Belle F. Batchelder	600 00		
Belle A. Prescott	600 00		
Amounts carried forward	$4,197 50		$16,629 75

Amounts brought forward		$4,197 50	$16,629 75

Paid for INSTRUCTION:

BARTLETT SCHOOL.

To	M. Ida Howe	600 00	
	Frances M. Talbot	595 00	
	Lola Cheney	591 25	
	Amy L. Tucke	600 00	
	Carrie E. Erskine	2 50	
	Nellie M. Shean	5 00	
	Ella M. Breen	8 75	
			6,600 00

BUTLER SCHOOL.

To	Cornelius F. Callahan, Principal	$1,800 00	
	Albertie T. Lane	470 00	
	Laura F. Howe	587 50	
	Nellie F. Keefe	600 00	
	Delia T. Brady	600 00	
	Nellie F. Murphy	600 00	
	Kate E. Kelly	600 00	
	Mary L. McSorley	600 00	
	Anastasia C. Corbett	596 00	
	Margaret T. McCarthy	335 26	
	Mary I. Donlon	335 26	
	Agnes L. Donoghue	180 00	
	Alice Hardman	28 75	
	Mary F. Ward	28 75	
	Grace Scribner	1 87	
	Agnes T. Fay	12 50	
	Elizabeth F. Garra	9 38	
			7,385 27

COLBURN SCHOOL.

To	Geo. W. Howe, Principal	$1,800 00	
	Elizabeth W. Frost	533 00	
	Sarah J. Crosby	590 25	
	Susan M. Andrews	351 25	
	Agnes L. Donoghue	419 37	
	Elizabeth A. Balch	415 50	
	Annie E. Slavin	420 00	
	Arvilla L. Reader	360 00	
Amounts carried forward		$4,889 37	$30,615 02

Amounts brought forward	$4,889 37	$30,615 02

Paid for INSTRUCTION:

COLBURN SCHOOL.

To	Margie F. Marren	403 75	
	Bertha M. Rowlandson	1 87	
	Jennie S. Noble	9 75	
	Agnes T. Fay	34 37	
	Grace W. Balch	62	
	Mary A. Gorman	9 38	
	Grace Scribner	51 25	
	Jennie Fay	7 50	
	Mary F. Ward	11 25	
			5,419 11

EDSON SCHOOL.

To	Calvin W. Burbank, Principal	$1,800 00	
	Frances M. Webster	600 00	
	Maria C. R. Swan	420 00	
	Nettie E. Carleton	551 00	
	Anna A. Sargent	476 75	
	Mary F. Carleton	96 25	
	Fanny A. Scripture	583 50	
	Rosalie T. Burns	580 00	
	Carrie Stone	600 00	
	Mary A. Balch	595 00	
	Kate F. Hayes	600 00	
	Jessie M. Rich	26 25	
	Carrie E. Erskine	23 75	
	Mary F. Foss	113 74	
	Mary L. Keith	333 99	
	Fanny Hardman	58 74	
	Grace Scribner	33 12	
	Sarah L. Dinsmore	18 74	
	Grace W. Balch	62	
	Alice B. Besse	35 00	
	Jennie S. Noble	62	
	Mary E. Lane	5 62	
	Marion J. Keyes	60 00	
	Helen M. Shean	76 25	
	Margie F. Marren	126 00	
			7,814 94

Amount carried forward		$43,849 07

Amount brought forward		$43,849 07

Paid for INSTRUCTION:

GREEN SCHOOL.

To Albert L. Bacheller, Principal	$1,800 00		
Ruth B. Bailey	600 00		
Clara A. Hannaford	600 00		
Lizzie A. Nolan	598 75		
Blanche E. Fay	596 25		
Kate F. Cassidy	600 00		
Ella J. Carleton	596 88		
Lena A. Gookin	600 00		
Kate F. McCarthy	470 00		
Carrie A. Miles	585 63		
Jennie Fay	6 25		
Gertrude A. Rodliff	1 25		
Jennie S. Noble	63		
Mary Carmichael	6 25		
Agnes T. Fay	1 25		
Annie I. Mead	81 89		
Alice Masterson	1 25		
Hattie F. Adams	5 62		
			7,151 90

HIGHLAND SCHOOL.

To Charles W. Morey, Principal	$1,800 00		
Alice M. Clark	600 00		
Flora J. Moffit	595 00		
Abbie F. Woodward	545 25		
Adelaide F. Bennett	600 00		
Luella A. Wardwell	600 00		
Ellen L. Floyd	599 37		
Fannie M. Clark	600 00		
Nellie M. Coburn	598 76		
Estelle L. Whitney	600 00		
Lizzie F. Lamere	599 37		
Edith L. Monroe	585 00		
Hattie B. Frye	600 00		
Hattie F. Adams	27 50		
Grace W. Balch	28 75		
Gertrude Allen	1 87		
Bertha M. Rowlandson	4 37		
Grace Scribner	5 00		
Amounts carried forward	$8,990 24		$51,000 97

Amounts brought forward	$8,990 24	$51,000 97

Paid for INSTRUCTION:

HIGHLAND SCHOOL.

To Minnie Gray	333 00	
Carrie Sprague	334 13	
Sarah L. Dinsmore	63	
Carrie E. Erskine	5 00	
Addie B. Merrill	18 75	
		9,681 75

MOODY SCHOOL.

To William S. Greene, Principal	$1,800 00	
Alice M. Sanborn	593 75	
Mary E. Way	600 00	
Carrie F. Smith	510 51	
Marcena F. Whitehorn	600 00	
Laura J. Pindar	598 75	
Frances E. Hardman	596 88	
Frances E. Garity	595 63	
Bertha M. Rowlandson	62	
Jennie S. Noble	6 25	
Gertrude A. Rodliff	62	
Grace E. Besse	8 12	
Mary R. Marren	3 12	
Sarah L. Dinsmore	4 37	
Mary F. Ward	1 25	
E. Belle Perham	8 75	
Grace W. Balch	8 12	
Fannie Hardman	16 88	
Elizabeth A. Balch	170 75	
Hattie F. Adams	6 88	
		6,131 25

PAWTUCKET SCHOOL.

To William P. Barry, Principal	$1,800 00	
Nellie MacDonald	547 25	
Celestia P. Chase	583 13	
Julia M. Healey	600 00	
Effie I. Marshall	600 00	
Lizzie F. Garra	21 87	
Annie I. Mead	13 75	
		4,166 00

Amount carried forward	$70,979 97

Amount brought forward			$70,979 97

Paid for INSTRUCTION:

VARNUM SCHOOL.

To	Arthur K. Whitcomb, Principal	$1,800 00	
	Georgianna F. Vinton	600 00	
	Harriet Bradley	600 00	
	Minnie F. Wing	600 00	
	Sarah A. Bradley	600 00	
	Alice R. Keese	600 00	
	Maria W. Roberts	600 00	
	Lizzie A. Hart	539 75	
	Rosa A. Dowd	600 00	
	Jennie Williams	606 00	
	Lizzie C. Kennedy	600 00	
	Bertha M. Rowlandson	115 00	
	Marietta Cassidy	3 75	
	Hattie F. Adams	21 25	
			7,885 75

PRIMARY SCHOOLS.

AGAWAM STREET.

To	Mary McLaughlin	$598 75	
	Annie M. Lee	587 49	
	Mary A. Fay	470 00	
	Mary E. Carmichael	3 13	
	Mary E. Gearey	52 50	
	Margaret M. Sparks	3 75	
	Lilla McEvoy	5 63	
	Mary F. Ward	1 25	
			1,722 50

AMES STREET.

To	Amanda M. Hadley	$600 00	
	Kate F. Murphy	600 00	
	Mary E. Drew	588 75	
	Lizzie M. Hadley	600 00	
	Nellie F. Davidson	11 25	
			2,400 00
Amount carried forward			$82,988 22

Amount brought forward		$82,988 22

Paid for INSTRUCTION:

CABOT STREET.

To Nellie T. Gilday	$596 87		
Martha A. Neal	600 00		
Mary J. Murphy	600 00		
Abbie V. Wheeler	598 75		
Ada E. Hoole	6 25		
Sarah E. Byrne	1 88		
Nellie Shean	1 25		
Alice Masterson	6 88		
Anna I. Mead	105 63		
Lyola McCann	51 87		
Lizzie Garra	1 25		
Agnes T. Fay	6 25		
		2,576	88

CARTER STREET.

To Belle T. Vinall	$596 87		
Georgia A. Harnden	597 50		
Cornelia M. Davis	600 00		
Lilla McEvoy	28 75		
		1,823	12

CENTRAL STREET.

To Eliza Cowley	$600 00		
Charlotte McDaniels	458 25		
Kate P. Lawler	388 13		
Lilla J. Greenhalge	588 00		
Carrie A. Paul	63		
Gertrude Allen	16 25		
Jennie T. Costello	5 00		
Nellie Hadley	116 25		
Mary F. Ward	20 00		
Ada E. Hoole	6 25		
Lizzie F. Garra	1 25		
Katharine S. Donovan	6 25		
		2,206	26

Amount carried forward		$89,594 48

Amount brought forward			$89,594 48

Paid for INSTRUCTION:

CHAPEL STREET.

To Kate E. McOwen	$598 75		
Mary A. Farnham	600 00		
Mary E. Gearey	62		
Mary Carmichael	63		
			1,200 00

CHARLES STREET.

To Alice T. Owens	$600 00		
Abby L. Sargent	120 00		
Ella E. Gardner	600 00		
Mary R. Marren	165 88		
Annie E. Slavin	180 00		
Margaret J. King	75 62		
Mary McSorley	3 75		
			1,745 25

CHEEVER STREET.

To Grace F. Ward	$ 35 00		
Ida J. Clarke	533 75		
Agnes T. Fay	52 50		
Mary E. Meehan	103 75		
Minnie F. Hill	120 00		
Margaret J. McCluskey	45 00		
Katharine T. Lennon	180 00		
Margie F. Marren	47 75		
Mary J. Carmichael	6 25		
			1,124 00

COTTAGE STREET.

To Lucy F. Carleton	$600 00		
Maggie A. Harrihan	600 00		
			1,200 00

DOVER STREET.

To Clara B. Horne	$600 00		
Clementine H. Bowers	562 75		
Bertha Gardner	600 00		
Margaret J. Sparks	20 00		
Fannie Hardman	23 12		
			1,805 87
Amount carried forward			$96,669 60

Amount brought forward		$96,669 60

Paid for INSTRUCTION:

ELIOT STREET.

To Ellen A. Stillings	$590 00	
Nellie T. O'Grady	600 00	
Winnifred Haggerty	600 00	
Ellen A. Corbett	600 00	
Addie B. Merrill	28 75	
Grace Scribner	6 25	
Ada E. Hoole	61 88	
		2,486 88

FAYETTE STREET.

To Mary E. Smith	$596 25	
Nellie Kohawn	600 00	
Alice B. Besse	3 75	
		1,200 00

FAIRMOUNT STREET.

To Alice B. Besse	$ 27 50	
Gertrude A. Rodliff	155 24	
Grace W. Balch	86 25	
		268 99

FOURTH STREET.

To Helen M. Brown	$540 00	
		540 00

FRANKLIN SCHOOL.

To Sarah C. Fiske	$593 75	
Lizzie S. Lowe	600 00	
Marion J. Stevenson	600 00	
Kate G. Jones	600 00	
Grace Scribner	6 25	
Elizabeth Worthley	43 13	
Mabel Nickerson	2 50	
Alice B. Besse	42 50	
		2,488 13

Amount carried forward	$103,653 60

Amount brought forward		$103,653 60

Paid for INSTRUCTION:

HIGH STREET.

To	Lucretia A. Day	$552 75	
	Clara A. Emerson	552 50	
	Gertrude Rodliff	3 75	
	Grace Scribner	11 25	
	Sarah L. Dinsmore	7 50	
	Mary L. Lane	6 25	
	Fannie Hardman	5 00	
	Alice B. Besse	18 75	
	Ella M. Breen	1 25	
	Malvina Lamere	11 25	
			1,170 25

HOWARD STREET.

To	Ellen A. Bridge	$600 00	
	Marion E. Greene	600 00	
	Ida J. Flint	195 00	
	Jennie M. Bennett	600 00	
	Alice Masterson	65 00	
	Lizzie F. Lamere	60 00	
	Minnie A. Williams	180 00	
			2,300 00

KIRK STREET.

To	Eliza A. Davis	$600 00	
	Laura H. Palmer	600 00	
			1,200 00

LONDON STREET.

To	Lizzie R. Maguire	$600 00	
	Rose E. McVey	597 50	
	Minnie F. Hill	480 00	
	Mary E. Gearey	53 75	
	Jennie Fay	1 87	
			1,733 12
Amount carried forward			$110,056 97

Amount brought forward			$110,056 97

Paid for INSTRUCTION:

LYON STREET.

To Alice T. Lee	$576 88		
Annabel Costello	535 00		
Mary J. McCarry	597 50		
Nellie A. Hunt	600 00		
Mary L. McCann	33 13		
Jennie S. Noble	1 25		
Annie I. Mead	14 38		
Katharine S. Donovan	5 00		
			2,363 14

MAMMOTH ROAD.

To Ellen M. Holden	$600 00		
Alice M. Batchelder	600 00		
Carrie M. Hart	600 00		
Mary E. Lane	55 62		
			1,855 62

MIDDLESEX VILLAGE.

To Hattie F. Wakefield	$470 00		
			470 00

MORRILL SCHOOL.

To Ellen F. Coughlin	$600 00		
Nellie M. Brown	583 75		
Lottie E. Brown	480 00		
Annie M. Courtney	600 00		
Mary J. Carmichael	16 25		
Jessie M. Rich	46 24		
Ella M. Breen	56 25		
Annie I. Mead	2 50		
			2,384 99

PLAIN STREET.

To Flora H. Sprague	$598 75		
Nellie F. Davidson	88 75		
Sarah E. Dinsmore	55 00		
Carrie E. Erskine	2 50		
Amounts carried forward	$745 00		$117,130 72

Amounts brought forward	$745 00	$117,130 72

Paid for INSTRUCTION:

PLAIN STREET.

To Grace Scribner	1 25	
Ella E. Prescott	96 25	
Cora M. Howe	81 88	
Carrie A. Paul	44 38	
		968 76

POWELL STREET.

To Viola A. Hamblett	$600 00	
Carrie J. Bailey	597 50	
Mary E. Worthley	2 50	
E. Belle Perham	25 00	
		1,225 00

POND STREET.

To Marietta Hill	$524 00	
Lizzie A. Molloy	600 00	
Jennie Fay	48 75	
		1,172 75

RIVER STREET.

To Alice A. Holtham	$420 00	
Marietta F. Crowley	600 00	
Hattie S. Simpson	578 87	
Agnes T. Courtney	119 37	
Adelaide Crowley	28 75	
Mary L. McSorley	118 11	
Nettie Upton	51 24	
Katharine S. Donovan	2 50	
Lilla McEvoy	18 75	
Malvina Lamere	53 12	
Margaret J. McCluskey	135 00	
		2,125 71

ROCK AND CROSS STREETS.

To Sarah E. Scales	$598 12	
Ellen M. White	600 00	
Ethel G. Wheeler	470 00	
Fannie Hardman	1 25	
		1,669 37
Amount carried forward		$124,292 31

Amount brought forward			$124,292 31

Paid for INSTRUCTION:

SCHOOL STREET.

To Annie S. Harlow	$ 75 00		
Ella E. Prescott	20 63		
Eugenia L. Hogan	278 75		
Carrie A. Paul	71 25		
Maud A. Jones	28 75		
Jessie M. Rich	62 50		
Grace Scribner	11 25		
Fannie A. Harding	335 25		
Annie M. Buckminster	200 25		
			1,083 63

TENTH STREET.

To Mary F. Bean	$590 62		
Fannie H. Murphy	454 99		
Katharine T. Lennon	418 75		
Ella A. Bailey	598 74		
Mary E. Worthley	62		
Malvina Lamere	14 37		
Nellie A. Upton	8 12		
Mary W. Carter	63		
Grace W. Scribner	1 25		
Alice A. Holtham	180 00		
Lizzie F. Garra	63		
Grace W. Balch	63		
			2,269 35

VARNUM AVENUE.

To Ida J. Clarke	$ 60 00		
Gertrude Allen	113 13		
Annie M. Buckminster	135 00		
Jennie S. Noble	20 62		
			328 75

WEED STREET.

To Mary B. McGovern	$600 00		
Agnes T. Foley	511 50		
Lilla McEvoy	5 00		
Jennie T. Costello	18 12		
Alice A. Masterson	29 37		
			1,163 99
Amount carried forward			$129,138 03

Amount brought forward		$129,138 03

Paid for INSTRUCTION:

WEST SIXTH STREET.

To Stella J. Allen	$600 00	
Hattie A. Palmer	540 00	
Minnie A. Wilson	597 50	
Margaret J. King	25 00	
Mary E. Meehan	25 00	
Sarah L. Dinsmore	3 75	
Nellie Hadley	3 75	
Lizzie F. Lamere	179 38	
Mary R. Marren	24 37	
Margaret J. McCluskey	155 25	
Marion S. Keyes	258 75	
Katharine S. Donovan	2 50	
		2,415 25

WORTHEN STREET.

To Mary L. Hill	$570 62	
Esther V. Green	467 50	
Mary J. Alger	600 00	
Lyola A. McCann	7 50	
Lucy E. Worthen	5 00	
Mary R. Marren	135 00	
Mary E. Lane	24 38	
Mary F. Ward	2 50	
Susie J. Neilon	45 00	
		1,857 50

TRAINING SCHOOL.

To Julia M. Dewey	$1,500 00	
Emily H. Radcliffe	680 00	
Kate T. Keyes	550 00	
Annie M. Buckminster	15 00	
Carrie M. Sprague	15 00	
Gertrude A. Rodliff	15 00	
Mary R. Marren	15 00	
Mary L. Keith	15 00	
Margaret J. McCluskey	15 00	
Minnie C. Gray	15 00	
Mary I. Donlon	15 00	
Amounts carried forward	$2,850 00	$133,410 78

Amounts brought forward	$2,850 00	$133,410 78
Paid for INSTRUCTION:		
To Fanny A. Hardy	15 00	
Margaret J. McCarthy	15 00	
Agnes T. Courtney	85 00	
Alice B. Besse	85 00	
Mary E. Meehan	85 00	
Margaret J. King	85 00	
Grace E. Besse	20 00	
Marietta Cassidy	110 00	
Nellie Davidson	110 00	
Sarah L. Dinsmore	65 00	
Mary F. Foss	110 00	
Agnes T. Fay	110 00	
Jennie Fay	110 00	
Mary E. Gearey	110 00	
Cora M. Howe	110 00	
Nellie Hadley	110 00	
Annie I. Mead	110 00	
Alice Masterson	110 00	
Mary McSorley	110 00	
Carrie A. Paul	95 00	
Bertha M. Rowlandson	110 00	
Helen Shean	110 00	
Elizabeth Worthley	95 00	
Delia J. Smith	20 00	
Hattie F. Adams	40 00	
Ellen M. Breen	40 00	
Grace W. Balch	40 00	
Mary W. Carter	40 00	
Mary J. Carmichael	40 00	
Margaret Conners	40 00	
Jennie T. Costello	40 00	
Adelaide Crowley	40 00	
Carrie E. Erskine	40 00	
Lizzie F. Garra	40 00	
Maud A. Jones	40 00	
Katharine Kelly	40 00	
Malvina Lamere	40 00	
Lyola McCann	40 00	
Lilla McEvoy	40 00	
Addie B. Merrill	40 00	
Mabel D. Nickerson	40 00	
Jennie S. Noble	40 00	
Amounts carried forward	$5,665 00	$133,410 78

Amounts brought forward	$5,665 00	$133,410 78
Paid for INSTRUCTION:		
To Grace F. Ward	40 00	
Mary F. Ward	40 00	
Lillian C. Wholley	40 00	
Gertrude Allen	40 00	
Fannie Hardman	40 00	
Nettie M. Upton	40 00	
Jessie M. Rich	40 00	
Anna L. Mead	40 00	
Mary E. Lane	40 00	
Ella E. Prescott	40 00	
Ada E. Hoole	40 00	
Grace Scribner	40 00	
		6,145 00
TEACHER OF PENMANSHIP.		
To Thomas M. Graves	$1,250 00	
		1,250 00
TEACHER OF DRAWING.		
To Olive E. Underhill	$1,250 00	
		1,250 00
TEACHER OF MUSIC.		
To Walter E. Owen	$1,250 00	
		1,250 00
TEACHER OF SEWING.		
To Ida J. Flint	$445 00	
		445 00
SUPERVISOR.		
To John A. Smith	$1,275 00	
		1,275 00
Amount carried forward		$145,025 78

Amount brought forward		$145,025 78

Paid for INSTRUCTION:

TRUANT OFFICERS.

To Bickford Lang	$800 00	
John F. Williams	800 00	
James Kelly	800 00	
		2,400 00

Paid for BOOKS:

To Warren P. Adams	$ 104 18	
Allyn & Bacon	53 40	
American Book Co	1,223 29	
Boston School Supply Co	223 11	
A. S. Barnes & Co	114 51	
E. A. Burgess	8 00	
Edward E. Babb & Co	2 41	
Educational Supply Co	75 99	
Effingham, Maynard & Co	90 57	
B. A. Fowler & Co	8 00	
Ginn & Co	576 64	
W. E. Hickcox	27 78	
J. L. Hammett	52 50	
Harrison Hume	530 04	
D. C. Heath & Co	172 31	
Houghton, Mifflin & Co	21 25	
Leach, Shewell & Sanborn	3 60	
J. B. Lippincott	135 84	
Lee & Shepard	201 66	
New York College for Training of Teachers	7 50	
Henry C. Nash	30 00	
Silver, Burdette & Co	1,153 87	
A. C. Stockin	3 60	
Carl Schoenhoff	151 00	
Charles W. Sever	4 00	
Thompson, Brown & Co	443 34	
Van Antwerp, Bragg & Co	30 24	
William Ware & Co	2,715 15	
		8,163 78

Amount carried forward	$155,589 56

Amount brought forward		$155,589 56
Paid for BLANK BOOKS, STATIONERY, ETC.:		
To Bay State Publishing Co., for maps,	$208 00	
Boston School Supply Co., for pens, paper, pencils, slates, call-bells, etc	654 56	
Bacheller, Dumas & Co., for blank books, binding and lettering	402 70	
A. S. Barnes & Co., for ink and ink-stands	12 00	
T. S. Buck, for flexible figures	3 00	
H. C. Church & Son, for blotting paper	12 10	
F. P. Coggeshall, for ink	3 00	
Citizen Newspaper Co., for cards, programmes, etc	25 00	
Eagle Pencil Co., for pencils	40 75	
Holden Book Cover Co., for book covers	19 04	
F. E. Johnson, for postal cards and printing	20 25	
J. Merrill & Son, for directory	2 00	
Prang Educational Co., for drawing books	706 40	
George S. Perry, for pens, paper, ink, mucilage, etc	749 54	
Parker & Bassett, for manilla paper,	7 14	
A. Storrs & Bement Co., for paper,	38 15	
Thorp & Adams, for ink	6 75	
Teachers' Publishing Co., for display charts	1 00	
Taylor Bros, for blank books	2 50	
M. R. Warren, for paper	20 38	
Weaver Printing and Mfg. Co., for book covers	308 75	
Wyckoff, Seamans & Co., for paper,	3 25	
		3,246 26
Paid for FUEL:		
To Appropriation for Roads and Bridges, for teaming coal	$327 85	
Amounts carried forward	$327 85	$158,835 82

Amounts brought forward			$	327 85	$158,835 82
Paid for FUEL:					
To Appropriation for Reserved Fund, for coal				409 43	
Appropriation for Paupers, for coal and wood				670 79	
D. W. Horne & Son, for coal				4,446 10	
Howard & Wilson, for coal				7 26	
William E. Livingston, for coal				2,102 14	
					7,963 57
Paid for SUNDRIES:					
To Appropriation for School-houses, for labor and material				$1,704 19	
Appropriation for Public Buildings, for lumber, labor, etc				16 07	
Appropriation for Water Works, for water-pipe, meters, fittings, and labor				1,741 66	
Lowell Gas Light Co., for gas				131 78	
Lowell Electric Light Corporation, for power				54 73	
New England Telephone & Telegraph Co., for use of telephones,				116 29	
Otis Allen & Son, for boxes				6 00	
Badger & Kimball, for lumber and labor				50	
A. P. Bateman, for lumber				3 24	
Davis & Sargent, for lumber				14 85	
Howe Bros. & Co., for lumber				31 09	
Mark Holmes, Jr., & Son, for lumber				7 80	
J. C. Bennett, for baskets and stencils				4 05	
Horace B. Shattuck, for ash-cans				16 60	
Frederick Taylor Co., for coal hods, hardware, hose, typewriters, etc.				478 18	
O. E. Averill, for rings, bolts, iron, and labor				6 00	
H. R. Barker Manufacturing Co., for repairing pencil sharpeners				60	
John Callaghan, for ash-cans, iron, and labor				107 78	
Amounts carried forward			$	4,441 41	$166,799 39

Amounts brought forward	$4,441 41	$166,799 39

Paid for SUNDRIES:

To L. A. Derby & Co., for repairing electric bells	5 47	
Eastern Electric Light and Storage Battery Co., for repairing electric bells	1 20	
S. H. Jones, for steam-heating apparatus at Pawtucketville School, as per contract	283 00	
W. A. Mack & Co., for drinking-cups, copper balls, grate, dust-pans, labor, etc	87 59	
O. A. Richardson, for repairing rifles,	6 00	
H. H. Wilder & Co., for repairing stoves, etc	24 03	
Samuel Young, for repairing electric bells and wires	10 01	
J. J. Cluin, for medals, engraving, clocks, and repairing clocks	98 50	
Charles T. Haskell, for repairing clocks	2 00	
G. H. Wood, for badges	25 00	
Adams & Co., for chairs, shades, fixtures, etc	58 50	
William T. Bradley, for matting and labor	25 30	
A. & E. Burton & Co., for dusters and brushes	40 50	
Benner & Corey, for enamel cloth	16 58	
D. Crowley, for ribbon	8 00	
George T. Callaghan, for waste	2 20	
Cassidy & Fahey, for cambric and lasting	3 92	
S. C. Davis, for blackboard erasers	5 30	
J. L. Hammett, for mats, cloth, fringes, etc	186 34	
Rose A. Jordan, for ribbon	16 80	
A. L. Kittredge, for spring rollers and shades	1 75	
Murphy, Leavens & Co., for brushes, dusters, etc	173 10	
Merrimack Croquet Co., for dumb-bells	46 50	
Amounts carried forward	$5,569 00	$166,799 39

Amounts brought forward	$5,569 00	$166,799 39
Paid for SUNDRIES:		
To Merrimack Rubber Co., for rubber bands	$ 8 70	
O'Donnell & Gilbride, for thread, yarn, cloth, pins, needles, and thimble	208 71	
J. F. Puffer & Son, for toilet tables,	3 00	
Sherman & Manning, for chair	3 50	
W. H. Spalding & Co., for pulleys, screw-eyes, etc	1 88	
Shea & McOsker, for shades, rollers, pulleys, and labor	16 23	
The Educational Supply Co., for barometer, zincs, wire, tuning-fork, tubes, etc	34 98	
A. G. Whitcomb, for settees	56 00	
Gilman A. Andrews, Agent, for vaporizers	26 30	
Clinton L. Bruce, for glue	75	
Carleton & Hovey, for hydrometers, chemicals, etc	13 82	
C. B. Coburn & Co., for mops, twine, cord, gold leaf, dusters, etc	58 79	
Cheever & Russell, for oil	45	
Donovan & Co., for oil, bags, mats, and baskets	130 13	
Ellingwood & Co., for elatol	50 00	
Eimer & Amend, for sulphuric acid and soap dishes	17 90	
E. F. Hathaway & Co., for painting signs	16 92	
Simpson & Rowland, for soapine and matches	15 42	
Talbot Dyewood and Chemical Co., for ammonia, muriatic acid, bottles, etc	45 48	
U. S. Tea Co., for barrels	50	
American Orchestra, for services at High School battalion drill	58 00	
Germania Orchestra, for services at graduating exercises	64 00	
Patten & Co., for wreaths and flowers	29 00	
Amounts carried forward	$6,429 46	$166,799 39

Amounts brought forward	$6,429 46	$166,799 39
Paid for SUNDRIES:		
To Frank E. Shaw, for entertainment of Germania Orchestra	16 00	
C. E. Austin, piano covers, use of pianos, and repairing drum	30 50	
Irvin A. Foote, for tuning pianos	43 00	
George Gardner, for drum-sticks and cord, and repairing drum	2 75	
Rugg & Gillard, for resetting head in bass drum	1 00	
William H. Green, for distributing school reports	47 00	
August Guillet, for services as interpreter	20 00	
Alfred Barney, for services as census enumerator	145 40	
H. H. Carroll, for services as census enumerator	77 00	
Charles C. Hartwell, for services as census enumerator	107 75	
John A. Herrick, for services as census enumerator	75 70	
Michael H. McCue, for services as census enumerator	140 20	
Ida J. Flint, for sewing material	85	
George M. Harrigan, for expenses of Committee on Sewing to Charlestown	5 15	
George F. Lawton, for expenses of committee, etc	53 27	
John A. Smith, for postage, rent of postoffice-box, traveling expenses, etc	66 30	
Mrs. W. E. Adams, for services as matron at Highland School	83 50	
Lilla C. Ward, for services as matron at Pawtucketville School	95 50	
F. G. Gulliland, for care of drill hall,	35 00	
Forest H. Peabody, for care of drill-hall	6 00	
Arthur Thurston, for care of drill-hall	9 00	
M. McDermott, for labor	2 50	
Amounts carried forward	$7,492 83	$166,799 39

Amounts brought forward	$7,492 83	$166,799 39

Paid for SUNDRIES:

To Mrs. D. Reynolds, for repairing curtains	2 00	
Georgiana F. Vinton, for cash paid for ribbon for diplomas	2 40	
John F. Williams, for cash paid for teaming	2 00	
Patrick F. Mellen, for services as janitor, and rent of house on Sycamore Street	275 00	
Owners of Urban Block, for rent of rooms	118 00	
J. F. Puffer, Jr., for rent of room on Bridge Street	180 24	
Swedish Church, for rent	52 50	
Thomas Fay, for cleaning vaults	6 00	
Fred A. Fox, for cleaning vaults	71 70	
W. P. Foye, for cleaning vaults	3 00	
O. Bartlett, for teaming	50	
Harmon & McDonald, for teaming	75	
John Hanley, for teaming	3 00	
James Harrington, for teaming	50	
Thomas Kerwin, for teaming	1 50	
Timothy Kelly, for teaming	50	
T. G. Little, for teaming	2 00	
James Leach, for teaming	2 75	
D. W. Mosher, for teaming	1 00	
A. Merrill, for teaming	8 75	
Daniel McCarthy, for teaming	8 00	
John Mahoney, for teaming	2 00	
James Nixon, for teaming	2 75	
John Ragen, for teaming	2 50	
William Roberts, for teaming	15 38	
P. H. Scanlon, for teaming	3 00	
E. A. Wood, for teaming	1 00	
Redmond Welch, for teaming	50	
Bickford Lang, for use of horse	100 00	
Morse & Sparks, carriage hire	37 50	
American Express Co., for transportation	27 45	
Boston & Lowell Express Co., for transportation	25 15	
Amounts carried forward	$8,452 15	$166,799 39

Amounts brought forward	$8,452 15		$166,799 39

Paid for SUNDRIES:

To Lovejoy-Paul Express Co., for transportation	2 80		
New York & Boston Despatch Express Co., for transportation	2 20		
New England Despatch Co., for transportation	19 15		
George E. Stanley, for transportation	28 74		
Boston & Maine Railroad, for transportation	90		
			8,505 94

EVENING SCHOOLS.

Paid for INSTRUCTION:

HIGH SCHOOL.

To Fred N. Wier, Principal	$380 00		
Cyrus W. Irish	231 00		
Thomas M. Graves	148 00		
Arthur S. Phillips	78 00		
John C. King	78 00		
Charles H. McIntire	146 00		
William A. Hogan	156 00		
Thomas A. Delaney	78 00		
Albert G. Smith	156 00		
Francis P. Rivet	78 00		
Edward W. Trull	78 00		
Clarence M. Whidden	70 00		
John P. Farley	52 00		
James F. Owens	70 00		
Cyrus A. Durgin	68 00		
William A. Charles	70 00		
Ezra B. Vining	70 00		
Charles J. Wier	20 00		
Gertrude A. Rodliff	78 00		
Mary Mansfield	148 00		
Jesse M. Rich	148 00		
F. Blanche Hard	102 00		
Katharine S. Donovan	48 00		
			2,551 00
Amount carried forward			$177,856 33

Amount brought forward		$177,856 33

Paid for INSTRUCTION:

BARTLETT SCHOOL.

To D. Emille Ross, Principal	$156 00		
Louie E. Brown	92 50		
M. Belle Dodge	91 25		
Mary R. Marren	48 75		
Annie S. Cummings	92 50		
Rebecca Gill	58 75		
Mary Keyes	88 75		
Mary E. Lennon	92 50		
Olive Parthenais	93 75		
Josie T. Sullivan	92 50		
Jennie Fay	91 25		
Mary Walker	92 50		
Annie I. Mead	92 50		
Kate Gill	92 50		
Edith F. Fuzzard	92 50		
Gertrude A. Burns	92 50		
Mary J. Carmichael	42 50		
Martha Rogers	10 00		
Annie E. Bedlow	31 25		
		1,544 75	

BUTLER SCHOOL.

To George P. Green, Principal	$156 00		
Halvah Lofgren	146 00		
Antonio Boroso	144 00		
Minnie Owens	92 50		
Lilla McEvoy	97 50		
Katharine S. Donovan	48 75		
Annie Finnick	90 00		
Mary I. Donlon	18 75		
Mary Meehan	62 50		
Jennie A. Holt	41 25		
Julia Kohawn	41 25		
Lizzie McLaughlin	36 25		
Mary McMahon	28 75		
		1,003 50	
Amount carried forward		$180,404 58	

Amount brought forward		$180,404 58

Paid for INSTRUCTION:

COLBURN SCHOOL.

To Stephen C. Gallagher, Principal	$78 00		
James F. Mellen, Principal	78 00		
Mary J. Griffin	91 25		
Ada E. Hoole	68 75		
Mary E. Gearey	92 50		
Annie M. Wright	88 75		
Bertha M. Rowlandson	53 75		
Adelaide Harnden	40 00		
Mary Gallagher	42 50		
Essie Owens	42 50		
Katharine Walsh	43 75		
Josephine Robieau	42 50		
			762 25

FRANKLIN SCHOOL.

To Frank S. Clark, Principal	$175 50		
John A. Gately	92 50		
Jennie S. Noble	92 50		
Nellie A. Keyes	92 50		
Malvina Lamere	97 50		
Alice T. Masterson	48 75		
Hattie F. Adams	92 50		
Mary A. Williams	48 75		
Annie I. Ilsley	10 00		
Ella E. Prescott	52 50		
Augusta C. Cregan	43 75		
Florence M. Churchill	43 75		
Lizzie Garra	8 75		
Grace Scribner	40 00		
Annie E. Donovan	7 50		
			946 75

AIKEN AVENUE.

To Rebecca Gill, Principal	$53 25		
Katie E. Cavanaugh	29 75		
Emma B. Colby	31 25		
Lizzie Garra	33 75		
Amounts carried forward	$148 00		$182,113 58

Amounts brought forward	$148 00	$182,113 58

Paid for INSTRUCTION:

AIKEN AVENUE.

To Adelaide A. Sullivan	30 00	
Martha Rogers	33 75	
Belle P. Miller	26 25	
		238 00

GREEN SCHOOL.

To Florence J. O'Donoghue, Principal,	$195 00	
August Guillet	96 25	
Kate F. Harrington	43 75	
Margaret J. McCluskey	48 75	
Nellie F. Davidson	43 75	
Ellen M. Breen	92 50	
Alice I. Smith	41 25	
Martha Fletcher	48 75	
Susie G. Neilon	40 00	
Mary E. Meehan	92 50	
Ellen F. Cummings	43 75	
Nellie F. Davidson	48 75	
Louisa I. Hickey	43 75	
Ida R. Thompson	48 75	
Nellie T. Gilroy	43 75	
Jennie T. Costello	48 75	
Lucretia M. Corr	42 50	
Annie G. Furlong	92 50	
Lizzie L. Welch	41 25	
Grace W. Balch	92 50	
Minnie T. Delaney	25 00	
Margaret T. McCarthy	48 75	
Annie E. Donovan	33 75	
Kate L. Gallagher	92 50	
Mamie Nawn	15 00	
Marietta W. Cassidy	48 75	
Adelaide Crowley	92 50	
Agnes T. Courtney	92 50	
Mary F. Shean	92 50	
Minnie A. Danahy	92 50	
Margaret J. Conners	92 50	
Annie McSorley	92 50	
Amounts carried forward	$2,107 50	$182,351 58

Amounts brought forward	$2,107 50	$182,351 58

Paid for INSTRUCTION:

GREEN SCHOOL.

To Mary E. Donnelly	92 50	
Lizzie J. Kenney	38 75	
Grace F. Ward	92 50	
Mary F. Foss	66 25	
Mary E. Worthley	67 50	
		2,465 00

MOODY SCHOOL.

To Josephine L. Fiske, Principal	$156 00	
Lizzie M. Allen	48 75	
Sarah L. Dinsmore	48 75	
Susie G. Driscoll	92 50	
Hannah A. Edwards	48 75	
Meta J. Fiske	97 50	
Mary A. Gorman	92 50	
Georgia E. Martin	48 75	
Carrie Paul	68 75	
Delia J. Smith	92 50	
Kate F. Allen	43 75	
Emma J. Boire	43 75	
Annie E. King	43 75	
Margaret J. Sparks	43 75	
Katharine G. Rourke	3 75	
		973 50

VARNUM SCHOOL.

To Henry T. Gilday, Principal	$74 00	
William B. Delaney, Principal	78 00	
Lizzie F. Garra	47 50	
Margaret J. King	97 50	
Agnes T. Fay	83 75	
Mary McSorley	12 50	
Annie B. Gibson	43 75	
Margaret Tancred	43 75	
Lizzie Lawler	28 75	
Mamie Donnelly	16 25	
		525 75

Amount carried forward	$186,315 83

Amount brought forward		$186,315 83

Paid for INSTRUCTION:

WORTHEN STREET.

To Clara L. Parsons	$156 00	
Ida E. Bisbee	97 50	
Anna A. Rodliff	48 75	
Genevra M. Dunn	48 75	
Mary F. Ward	92 50	
Gertrude Allen	92 50	
Grace Scribner	48 75	
Alice C. Green	43 75	
Alice A. Masterson	43 75	
Winnifred N. Kneeland	43 75	
		716 00

Paid for SERVICES OF JANITORS:

To Warren N. Roberts	$77 00	
Peter F. Kelly	78 00	
Thomas Hannafin	78 00	
William Goodroe	74 00	
Patrick Donohoe	78 00	
Frank Danahy	74 00	
Michael Finnegan	78 00	
Bernard McNulty	34 00	
James McCormack	39 00	
George A. Philbrick	78 00	
John A. Herrick	78 00	
Michael McDermott	70 00	
James F. Hurley	78 00	
G. W. Scrutton	24 00	
Thomas H. Conley	78 00	
John Manchester	78 00	
Edward Burns	39 00	
Patrick Buckley	39 00	
James McNamara	39 00	
James Dwyer	39 00	
Patrick McGilley	78 00	
Omer Bedard	33 00	
David B. Meers	76 00	
		1,437 00

Amount carried forward	$188,468 83

Amount brought forward			$188,468 83
Paid for SUNDRIES:			
To Appropriation for School-houses, for lumber, hardware, and labor	$ 15 24		
Lowell Gas Light Co., for gas and meter connections	1,150 18		
Bachelder, Dumas & Co., for blank books	1 75		
George E. Gardner, for use of piano, music, etc	60 60		
F. E. Johnson, for postal cards and printing	6 75		
Farrell & Conaton, for pipe, fixtures, labor, etc	88 55		
Patten & Co., for decorations and flowers	12 00		
W. H. Bagley, for services at rehearsals	9 00		
Mrs. W. H. Bagley, for services at rchearsals	7 50		
T. M. Graves, for entertainment	18 00		
M. W. Mansfield, for filling out certificates	6 00		
Standard Orchestra, for services	30 00		
John F. Williams, for services	15 00		
Fred N. Wier, for postage, etc	3 90		
Morse & Sparks, for carriage hire	12 75		
John Ragen, for teaming	1 00		
William Roberts, for teaming	4 00		
Patrick H. Scanlon, for teaming	1 50		
			1,443 72
Paid for SCHOOL-HOUSE, AIKEN AVENUE:			
To Appropriation for School-houses, for lumber, brick, cement, paint, and labor	$636 06		
Appropriation for Public Buildings, for hardware	24 40		
Estate F. A. Hildreth, for rent of land	60 36		
Otis Allen & Son, for lumber	260 28		
Amounts carried forward	$981 10		$189,912 55

Amounts brought forward	$981 10	$189,912 55	

Paid for SCHOOL-HOUSE, AIKEN AVENUE:

To A. L. Brooks & Co., for lumber	5 11		
Burnham, Forrest & Davis, for lumber	47 89		
Howe Bros. & Co., for lumber	475 07		
William Kelley & Son, for doors and sash	29 40		
J. W. Bennett & Co., for windows	21 60		
J. C. Bennett, for hardware	8 72		
H. B. Shattuck, for hardware	11 44		
Farrell & Conaton, for pipe, fixtures, labor, etc	31 10		
Rice & Co., for wire cloth	1 35		
Conners Bros., for stone chips	2 50		
G. W. Bagley, for labor	35 13		
William Emerson, for labor	28 75		
J. B. Varnum, for labor	16 50		
Whittet & McDonald, for labor	55 00		
T. G. Little, for teaming	1 00		
		1,751	66

DRAWING SCHOOLS.

Paid for INSTRUCTION:

To Kate Burrage	$273 00		
Ellen D. Carney	400 00		
Isabella Coburn	240 00		
Mary E. Cushing	207 00		
Abby F. Davis	291 00		
Addie E. Edwards	24 00		
Ella C. Green	240 00		
Martha A. Paul	168 00		
E. Lizzie Whitney	291 00		
Helen M. Wright	400 00		
Ida M. Wright	240 00		
J. Nelson Dennis	195 00		
F. W. Farnham	246 00		
W. M. Foster	261 50		
Samuel G. Stephens	273 00		
Fred. W. Stickney	285 50		
		4,035	00
Amount carried forward		$195,699	21

Amount brought forward			$195,699 21
Paid for SERVICES OF JANITORS:			
To Hiram R. Blanchard	$96 00		
A. A. Laughton	79 00		
			175 00
Paid for SUNDRIES:			
To Appropriation for School-houses, for labor and material	$ 88 71		
Appropriation for Roads and Bridges, for labor	1 75		
Lowell Electric Light Corp., for lighting	294 24		
Lowell Gas Light Co., for gas and use of lamps	116 74		
Farrell & Conaton, for chimneys	1 50		
A. A. Laughton, for labor	2 00		
Frederick Taylor Co., for wire	30		
C. B. Coburn & Co., for glue, gum-arabic, etc	6 34		
W. H. Spalding & Co., for flake white,	53		
Boston Bank Note and Lithographing Co., for diplomas	100 00		
H. C. Church & Son, for paper	2 00		
G. C. Prince & Son, for subscription,	4 00		
P. P. Caproni, for studies	4 70		
Frost & Adams, for crayon studies,	8 64		
Paul A. Garey & Co., for modelling clay, etc	43 00		
Stereo Relief Decorative Co., for studies	7 70		
Merrimack Rubber Co., for duck and repairing atomizer	8 15		
Quinlan & Washburn, for atomizer,	1 00		
Ellen D. Carney, for postal cards	1 50		
Helen M. Wright, for cretonne	5 22		
D. W. Mosher, for teaming	1 00		
Alphonso Merrill, for teaming	1 50		
James Nixon, for teaming	75		
Morse & Sparks, for carriage hire	12 00		
			713 27
Total expenditure for the year 1890			$196,587 48

SCHOOL-HOUSES.

Balance undrawn, Jan. 1, 1890	$32,987 65	
Appropriation	25,000 00	
		$57,987 65

RECEIPTS.

Received into the Treasury on account of SCHOOL-HOUSES:

From Appropriation for Schools, for labor and material	$2,444 20	
Appropriation for Public Buildings, for labor and material	84 36	
F. O. Decatur, for overdraft	1 00	
J. D. Hartwell, for old building, Cabot Street	25 00	
George S. Perry, for freight and labor	30 29	
W. H. Spalding & Co., for blackboard material	50	
W. H. Wiggin, for blackboard material, labor, etc	9 75	
George T. Woodward, for sale of building and old material	62 38	
Commissioners of Sinking Funds, on loan	4,000 00	
Lowell Institution for Savings, on loan	18,500 00	
		25,157 48
		$83,145 13

EXPENDITURES.

Paid for LUMBER, HARDWARE, ETC.:

To Otis Allen & Son, for lumber	$ 41 60		
A. L. Brooks & Co., for lumber	101 12		
A. P. Bateman, for lumber	292 66		
Badger & Kimball, for lumber	1 10		
Burnham, Forrest & Davis, lumber.	207 16		
Davis & Sargent, for lumber	4 55		
Mark Holmes, Jr., & Son, for lumber and labor	6 50		
Howe Bros. & Co., for lumber	98		
Wm. Kelley & Son, for lumber, doors and sash	11 45		
Amasa Pratt & Co., for lumber	79 31		
Sturtevant & Galer, for brackets	5 00		
Charles E. Adams, for hardware, etc.,	165 57		
Bartlett & Dow, for hardware	30 55		
J. C. Bennett, for hardware	85 07		
Boutwell Bros., for iron	45		
F. W. Cheney & Co., for hardware,	15 92		
H. B. Shattuck, for hardware	33 87		
Frederick Taylor Co., for hardware,	119 44		
			1,202 30

Paid for SUNDRIES:

To Sundry persons, for labor, as per pay-rolls	$ 6,664 37	
Sundry persons, for services as janitors	16,275 84	
Appropriation for Roads and Bridges, for sidewalk assessment, West Sixth Street	20 90	
Appropriation for Roads and Bridges, for labor and material	2 50	
Appropriation for Public Buildings, for labor and material	91 58	
O. E. Averill, for blacksmithing	13 78	
A. H. Abbott, for blacksmithing	3 11	
H. R. Barker Mfg. Co., for pipe, fittings, labor, etc	429 63	
Amounts carried forward	$23,501 71	$1,202 30

Amounts brought forward	$23,501 71	$1,202 30
Paid for SUNDRIES:		
To Boutwell Bros., for iron	1 16	
T. Costello & Co., for pipe, fittings, tin, solder, and labor	152 64	
Cole & Nichols, for ink-well covers,	2 60	
Daniel Cushing & Co., for tin	6 50	
Richard Dobbins, for grates, labor, and inspecting boilers	141 28	
F. O. Decatur, for blacksmithing	2 00	
L. A. Derby & Co., for electrical apparatus and labor	29 70	
Farrell & Conaton, for pipe, fittings, solder, labor, etc	175 35	
S. H. Jones, for pipe, fittings, labor, etc	446 48	
D. W. Mullen, for putty, solder, and labor	2 35	
W. A. Mack & Co., for tin, iron, labor, etc	63 76	
Middlesex Machine Co., for heating and ventilating apparatus for Franklin School	2,500 00	
Middlesex Machine Co., for heating and ventilating apparatus for Edson School	3,250 00	
Scannell & Wholey, for boiler for Franklin School	235 00	
Scannell & Wholey, for repairing and inspecting boilers, labor, etc.,	379 65	
C. C. Thompson, for wrench	1 00	
N. J. Wier & Co., for grates and pipe	8 97	
H. H. Wilder & Co., for ventilators, pipe, fittings, and labor	168 70	
Rice & Co., for wire cloth	12 16	
Adams & Co., for bocking and chairs,	22 88	
H. F. Ebert, for enameled cloth	6 00	
Foster & Brickett, for curtains	70 80	
Glover & Heywood, for brushes	7 25	
Harwood Manufacturing Co., for fibre seats	3 60	
A. L. Kittredge, for shades	15 00	
Alvin Lawrence, for repairing clocks,	10 87	
Amounts carried forward	$31,217 41	$1,202 30

Amounts brought forward	$31,217 41	$1,202 30
Paid for SUNDRIES:		
To Merrimack Rubber Co., for rubber thread	35	
A. G. Whitcomb & Co., for furniture	504 40	
C. B. Coburn & Co., for oil, paint, glass, brushes, etc	152 88	
Cheever & Russell, for oil and salt,	30	
Chicago Varnish Co., for varnish	76 50	
Thomas Hall, for aniometer	25 00	
Lowell Co-operative Association, for pearline	38	
New England Adamant Co., for adamant	83 70	
William Nichols & Co., for oil	14	
Perrin, Payson & Co., for varnish	26 00	
W. H. Spalding & Co., for lead, oil, glass, paint, brushes, etc	284 96	
P. V. Allen, for foundation for addition to school-house on Cheever Street	174 00	
T. D. Bailey, for mason work and material	123 96	
S. D. Butterworth, for mason work and material	129 25	
Conners Bros., for cement, sand, and lime	45 80	
Coburn & Crosby, for mason work and material	102 00	
Frederick Frye, for brick	132 00	
Robert Goulding, for slate, zinc, and labor	209 69	
Howard & Wilson, for sand, lime, cement, and brick	66 40	
Wm. E. Livingston, for lime, cement, sand and brick	77 16	
D. M. Prescott, for mason work and material	205 65	
Staples Bros., for drain-pipe	75 19	
Proprietors of Locks & Canals on Merrimack River, for rent of land on Cheever Street	1 00	
Amounts carried forward	$33,714 12	$1,202 30

Amounts brought forward	$33,714 12	$1,202 30
Paid for SUNDRIES:		
To Luther Richards & Co., for moving building from Cabot Street	90 00	
F. W. Stickney, for labor on plans for heating	5 00	
G. T. Woodward, for keeping horse,	263 61	
B. G. Brown, for teaming	34 00	
Charles Clapp, for teaming	30 50	
Conners Bros., for teaming	3 60	
C. H. Hanson & Co., for teaming	15 50	
Thomas Kerwin, for teaming	2 75	
Timothy Kelly, for teaming	1 50	
D. P. Knowlton, for teaming	2 50	
T. G. Little, for teaming	5 50	
James Leach, for teaming	1 50	
D. Lyons, for teaming	2 00	
A. Merrill, for teaming	12 12	
Daniel McCarthy, for teaming	7 50	
James McLean, for teaming	1 50	
D. W. Mosher, for teaming	2 00	
Frank Meehan, for teaming	1 00	
James Nixon, for teaming	2 75	
William Roberts, for teaming	27 12	
John Ragen, for teaming	2 00	
E. A. Wood, for teaming	1 50	
Morse & Sparks, for carriage hire	2 00	
American Express Co., for transportation	15	
Boston & Maine Railroad, for transportation	7 50	
Boston & Maine Railroad, Lowell System, for transportation	8 59	
		34,247 81
Paid for LAND AND SCHOOL-HOUSE ON CROSS STREET:		
To Sundry persons, for labor, as per pay-roll	$938 75	
Appropriation for Public Buildings, for lumber, hardware, and paint,	178 25	
Appropriation for Water Works, for pipe, fittings, meter, and labor,	53 45	
Amounts carried forward	$1,170 45	$35,450 11

Amounts brought forward	$1,170 45	$35,450 11
Paid for LAND AND SCHOOL-HOUSE ON CROSS STREET:		
To Fred W. Stickney, for plans, specifications, and detail drawings	518 31	
P. Conlon, for mason work as per contract	5,142 74	
C. P. Conant, for carpenter work as per contract	5,556 99	
W. H. Fuller, for bank wall as per contract	213 00	
Fuller & Warren Warming and Ventilating Co., for warming, ventilating, and sanitary construction	2,090 00	
Robert Goulding, for slating	576 40	
A. P. Bateman, for door	3 50	
Howe Bros. & Co., for lumber	1 84	
Amasa Pratt & Co., for lumber	82 73	
Charles E. Adams, for hardware	09	
Boutwell Bros., for iron	29 82	
Frederick Taylor Co., for hardware	1 81	
Farrell & Conation, for testing soil pipe	11 05	
W. A Magee, for sharpening tools	3 81	
Rice & Co., for window guards	55 83	
Andrews & Wheeler, for labor on blackboard	4 55	
Conners Bros., for brick and labor	41 00	
Howard & Wilson, for lime, sand, and cement	60 70	
D. W. Horne & Son, for coal	7 31	
William E. Livingston, for cement,	1 25	
Staples Bros., for drain pipe and brick	10 51	
E. A. & A. T. Smith, for concrete	292 25	
Charles Runels, for stone and labor,	18 90	
C. B. Coburn & Co., for paint, putty, etc	9 68	
Adams & Co., for chairs	16 00	
Foster & Brickett, for shades	40 97	
Alvin Lawrence, for clocks	32 00	
Amounts carried forward	$15,993 49	$35,450 11

Amounts brought forward	$15,993 49	$35,450 11
Paid for LAND AND SCHOOL-HOUSE ON CROSS STREET:		
To George S. Perry, for slate blackboard	195 65	
A. G. Whitcomb, for furniture	500 12	
American Express Co., for transportation	70	
Boston & Maine Railroad, for transportation	6 75	
Boston & Maine Railroad, Lowell System, for transportation	10 59	
D. P. Knowlton, for teaming	1 00	
James Leach, for teaming	50	
A. Merrill, for teaming	2 63	
James Nixon, for teaming	1 50	
William Roberts, for teaming	50	
E. A. Wood, for teaming	2 00	
		*16,715 43
Paid for LAND AND SCHOOL-HOUSE ON CABOT STREET:		
To Sundry persons, for labor as per payrolls	$ 974 20	
Appropriation for Public Buildings, for lumber, hardware, and paint,	170 44	
Appropriation for Water Works, for metre, couplings, fittings, labor, etc.	51 42	
Fred W. Stickney, for plans and specifications	475 89	
C. P. Barclay & Son, for carpenter work as per contract	5,587 16	
C. P. Barclay & Son, for labor and material	92 68	
P. Conlon, for brick work as per contract	5,282 50	
Amounts carried forward	$12,634 29	$52,165 54

* To this amount add the sum of $7,152.57 expended in 1889, making total cost of land and building $23,868.00.

Amounts brought forward	$12,634 29	$52,165 54
Paid for LAND AND SCHOOL-HOUSE ON CABOT STREET:		
To Robert Goulding, for slating as per contract	548 40	
Fuller & Warren Warming and Ventilating Co., for warming, ventilating, and sanitary construction	2,035 00	
A. L. Brooks & Co., for lumber	9 03	
William Kelley & Son, for moulding,	2 50	
Amasa Pratt & Co., for lumber	24 81	
Boutwell Bros., for iron	17 39	
Chelmsford Foundry Co., for castings	10 52	
Richard Dobbins, for iron, labor, and teaming	16 24	
Joel Knapp & Son, for iron and labor	1 35	
Frederick Taylor Co., for hardware	8 75	
S. H. Jones, for fittings and labor	2 76	
Rice & Co., for window guards	51 04	
Andrews & Wheeler, for labor on blackboards	4 55	
D. W. Horne & Son, for coal	43 88	
Howard & Wilson, for coal, lime, cement, and sand	37 65	
E. A. & A. T. Smith, for concrete	276 50	
C. B. Coburn & Co., for paint, lead, etc	4 54	
Adams & Co., for chairs	16 00	
Foster & Brickett, for shades	44 87	
Alvin Lawrence, for clocks	32 00	
George S. Perry, for slate blackboards	212 29	
Conners Bros., for teaming	24 00	
Charles Clapp, for teaming	4 00	
Thomas Kerwin, for teaming	1 00	
Timothy Kelley, for teaming	1 25	
G. H. McNabb, for teaming	75	
Daniel McCarthy, for teaming	50	
William Roberts, for teaming	50	
Amounts carried forward	$16,066 36	$52,165 54

Amounts brought forward		$16,066 36		$52,165 54
Paid for LAND AND SCHOOL-HOUSE ON CABOT STREET:				
To E. A. Wood, for teaming		2 50		
Boston & Maine Railroad, Lowell System, for transportation		10 85		
				*16,079 71
Paid for ADDITION TO HIGHLAND SCHOOL-HOUSE:				
To Sundry persons, for labor as per payrolls		$1,273 16		
Appropriation for Public Buildings, for lumber, hardware, paint and labor		184 83		
Fred W. Stickney, for plans and specifications (balance)		178 70		
C. F. Foss, for brick work		3,016 42		
W. H. Fuller, for bank wall		319 00		
Robert Goulding, for slating		644 71		
Smead Warming and Ventilating Co., for heating and ventilating apparatus		1,750 00		
J. B. Varnum, for carpenter work		4,670 39		
A. P. Bateman, for lumber		4 64		
Burnham, Forrest & Davis, for lumber		24 48		
A. L. Brooks & Co., for lumber		72 03		
Howe Bros. & Co., for lumber		1 94		
Charles E. Adams, for hardware and paint		22 68		
Boutwell Bros., for iron		1 54		
Bartlett & Dow, for hardware		6 95		
Chelmsford Foundry Co., for castings		17 88		
Cole & Nichols, for castings		1 88		
H. B. Shattuck, for hardware		2 28		
Frederick Taylor Co., for hardware,		10 93		
Amounts carried forward		$12,204 44		$68,245 25

* To this amount add the sum of $7,336.23 expended in 1889, making total cost of land and building $23,415.94.

Amounts brought forward	$12,204 44	$68,245 25
Paid for ADDITION TO HIGHLAND SCHOOL-HOUSE:		
To H. R. Barker Manufacturing Co., for fittings and labor	24 93	
Daniel Cushing, for conductors	9 00	
L. A. Derby & Co., for speaking-tubes, wire, staples, and labor	52 05	
Eastern Electric Light and Storage Battery Co., for speaking-tubes, electric bells, buttons, labor, etc.,	185 41	
S. H. Jones, for plumbing, fittings, and labor	166 96	
W. A. Mack & Co., for thimbles, galvanized iron, and labor	158 27	
Rice & Co., for window guards	40 83	
Adams & Co., for chairs, shades, and fixtures	99 00	
Alvin Lawrence, for clocks	32 00	
George S. Perry, for slate blackboards	276 94	
A. G. Whitcomb, for furniture	680 20	
C. B. Coburn & Co., for paint, oil, glass, gold leaf, etc	31 86	
Conners Bros., for sand, gravel, and cement	13 60	
Howard & Wilson, for lime and cement	10 05	
D. W. Horne & Son, for coal	126 42	
William E. Livingston, for coal	6 00	
Staples Bros., for drain pipe	1 43	
E. A. & A. T. Smith, for concrete	270 37	
George T. Woodward, for expenses of committee	5 79	
Boston & Maine Railroad, Lowell System, for transportation	14 63	
Boston & Maine Railroad, for transportation	10 80	
Daniel Reynolds, for labor	51 45	
Thomas Kerwin, for teaming	1 75	
Frank Meehan, for teaming	1 00	
Daniel McCarty, for teaming	50	
A. Merrill, for teaming	1 25	
Amounts carried forward	$14,476 93	$68,245 25

Amounts brought forward.....	$14,476 93	$68,245 25
Paid for ADDITION TO HIGHLAND SCHOOL-HOUSE:		
To James Nixon, for teaming.....	8 00	
John Ragen, for teaming.....	75	
William Roberts, for teaming.....	1 25	
E. A. Wood, for teaming	75	
		*14,487 68
Total expenditure for the year 1890....		$82,732 93
Transferred to Appropriation for Schools,		412 20
		$83,145 13

* To this amount add the sum of $7,599.86 expended in 1889, making total cost of addition $22,087.54.

ROADS AND BRIDGES.

Appropriation for 1890.....	$70,000 00	
		$70,000 00

RECEIPTS.

Received into the Treasury on account of Roads and Bridges:

Received for MATERIAL, LABOR, ETC.:

From Appropriation for Schools, for labor.....	$ 330 55	
Appropriation for School-houses, for labor.....	1 55	
Appropriation for Reserved Fund, for labor and services of City Engineer and assistants.....	346 47	
Appropriation for Paupers, for labor and material.....	92 84	
Appropriation for Police, for labor,	51 38	
Appropriation for Fire Department, for labor.....	135 83	
Appropriation for Sewers and Drains, for services of City Engineer, Superintendent of Streets, keeping horse, etc..	1,650 36	
Appropriation for Commons, for crushed stone and labor.....	98 00	
Amounts carried forward.....	$2,706 98	$70,000 00

Amounts brought forward	$2,706 98	$70,000 00
Received for MATERIAL, LABOR, ETC.:		
From Appropriation for Lighting, for repairing lantern frames, labor, etc	63 88	
Appropriation for Public Buildings, for labor and services of City Engineer	90 65	
Appropriation for Health, for labor and material	432 68	
Appropriation for Water Works, for services of City Engineer and assistants	358 56	
Appropriation for Pawtucket Boulevard, for labor	589 95	
Appropriation for Extension of Palmer Street, for labor, etc.,	457 89	
Appropriation for City Hall and Memorial Building, for labor and services of City Engineer,	315 00	
Appropriation for Improvement of Andover Street Sewer System, for services of City Engineer and assistants	173 25	
James Brown, for coal	13 23	
Henry Hoole, for coal	12 75	
Charles F. Kidder, for coal	37 91	
C. F. Varnum, for coal	61 82	
Charler H. Allen, for crushed stone and labor	33 75	
Horace P. Beals, for sale of coal, manure, crushed stone, old harness, etc	1,224 85	
S. D. Butterworth, for crushed stone	9 00	
County of Middlesex, for manure and labor	145 75	
A. A. Coburn, for crushed stone,	4 00	
W. H. Downs, for crushed stone,	1 00	
Thomas H. Elliott, for edgestone and labor	11 22	
Joseph Evans, for edgestone and labor	20 17	
Amounts carried forward	$6,764 29	$70,000 00

Amounts brought forward	$6,764 29	$70,000 00
Received for MATERIAL, LABOR, ETC.:		
From Irvin A. Foote, for crushed stone,	8 00	
Hamilton Manufacturing Co., for edgestone and labor	74 79	
O. R. Blood, for manure	5 00	
C. I. Hood, for crushed stone	5 00	
John L. Jaques	5 00	
George G. Kelly, for manure	28 00	
John F. Kimball, for crushed stone	2 00	
Lowell Gas Light Co., for labor	9 75	
Lowell Electric Light Corporation, for labor	68 33	
Edward Lyons, for crushed stone,	2 00	
F. G. Mitchell, for sidewalk	37 20	
Thomas May, for crushed stone	2 00	
New England Telephone & Telegraph Co., for labor	14 51	
Henry L. Newhall, for edgestone,	90 24	
Charles D. Palmer, for labor	5 75	
Percy Parker, for crushed stone	40 00	
Nathan D. Pratt, for manure	1 00	
Luther Richards, for flagging and labor	13 01	
Thomas Rogers, for stone	3 00	
N. A. Ranlett, for crushed stone,	2 50	
James S. Russell, for manure	2 00	
George A. Scribner, for edgestone, concrete, and labor	105 90	
George F. Scribner, for edgestone and labor	13 23	
Charles A. Stott, for crushed stone, drills, etc	20 00	
Charles D. Starbird, for manure	44 00	
Harriet Smith, for labor and material	9 30	
St. John's Hospital, for crushed stone	12 00	
William C. Stevenson, for bound stone	2 00	
Walter H. Stackpole, for overdraft	3 10	
Amounts carried forward	$7,392 90	$70,000 00

Amounts brought forward.....	$7,392 90	$70,000 00
Received for MATERIAL, LABOR, ETC.:		
From Julius Stiles, for circle-stone and labor.....	22 72	
Frederick Taylor, for crushed stone.....	8 75	
A. G. Thompson, for brick and labor.....	18 23	
George W. Trull, for manure....	89 00	
J. B. Trueworthy, for edgestone,	10 00	
J. P. Thompson, for edgestone and labor.....	41 00	
S. L. Ward, for old lumber.....	5 00	
Western Union Telegraph Co., for labor.....	13 94	
W. H. White, for crushed stone,	12 50	
Commissioners of Sinking Funds, on loan.....	7,500 00	
Lowell Institution for Savings, on loan for paving.....	25,000 00	
		40,114 04
Received for SIDEWALK ASSESSMENTS:		
From Thomas Mahoney, Adams Street,	$ 62 95	
Proprietors of Locks & Canals, Aiken Street.....	180 61	
Proprietors of Locks & Canals, Aiken Street.....	247 97	
Horace E. Morse, Auburn Street,	18 50	
George E. Mitchell, Auburn Street,	33 03	
John F. Bateman, Andrews Street,	1 37	
Estate of Michael Collins, Andrews Street.....	14 06	
B. Frank Crosby, Andrews Street,	10 00	
Patrick Curry, Andrews Street..	8 97	
Mary A. Corrigan, Andrews Street,	9 27	
Pierre Gendron, Andrews Street,	9 27	
W. N. Gilbert, Andrews Street..	9 27	
John C. Irish, Andrews Street...	47 73	
Maurice Kearney, Andrews Street,	9 27	
Amounts carried forward.....	$662 27	$110,114 04

Amounts brought forward.....	$662 27	$110,114 04
Received for SIDEWALK ASSESSMENTS:		
From William Myers, Andrews Street,	9 34	
Margaret McKenney, Andrews Street.....	9 16	
William Manning, Andrews Street.....	11 63	
Benjamin Shepard, Andrews Street.....	13 95	
Ellen L. Shepard, Andrews Street,	9 27	
James Smith, Andrews Street...	9 27	
Stone & Utley, Andrews Street..	13 64	
John Murphy, Albion Street.....	49 50	
David Whittaker, B Street.....	45 00	
Peter F. Cawley, Bridge Street..	14 40	
Centralville M. E. Church, Bridge Street.....	56 42	
Sullivan Holman, Bridge Street..	12 00	
Albert Hallowell, Bridge Street..	75 72	
Charles E. Hallowell, Bridge Street.....	19 60	
George W. Knowlton, Bridge Street.....	14 00	
M. A. Lillie and Martha Hopkinson, Bridge Street.....	13 60	
Elias A. McQuade, Bridge Street,	13 52	
James Barris, Congress and Thorndike Streets.....	27 40	
First Primitive Methodist Church, Congress and Thorndike Streets.....	70 65	
Hattie A. Colby, Clay Street....	16 80	
F. X. A. Hurtubise, Clay Street..	19 40	
F. W. Morrison, Clay Street....	21 00	
E. F. Morrill, Clay Street.....	27 86	
Celia L. Pratt, Clay Street.....	27 59	
Laura E. Richardson, Clay Street,	21 00	
E. A. Smith and F. B. Shedd, Clay Street.....	42 00	
E. A. Smith and F. B. Shedd, Clay Street.....	21 00	
E. A. Smith and F. B. Shedd, Clay Street.....	21 00	
Amounts carried forward.....	$1,367 99	$110,114 04

Amounts brought forward.....	$1,367 99	$110,114 04
Received for SIDEWALK ASSESSMENTS:		
From E. A. Smith and F. B. Shedd, Clay Street.....	23 39	
E. A. Smith and F. B. Shedd, Clay Street.....	21 00	
Edward Burns, Concord Street..	14 99	
James Burns, Concord Street....	28 69	
John Breen, Concord Street.....	31 29	
Charles Conners, Concord Street,	21 08	
James Gookin, Concord Street...	33 74	
E. A. Smith and F. B. Shedd, Concord Street	139 94	
John White, Cross Street.....	31 01	
J. A. Hadley, Cumberland Road,	65 44	
Estate of F. A. Hildreth.....	230 68	
E. E. McLearn, Cumberland Road,	58 41	
Tremont and Suffolk Mills, Cheever Street.....	81 77	
New England Bunting Co., Davidson Street.....	47 27	
James Saunders, Decatur Street,	47 46	
Paul Vigeant, Decatur Street....	19 68	
Lawrence Farley, East Merrimack Street	17 16	
John H. Blake, Fulton Street....	14 70	
John H. Blake, Fulton Street....	8 66	
Mary A. Clark, Fulton Street....	12 79	
Mary A. Connolly, Fulton Street,	14 04	
Bridget Cavanaugh, Fulton Street,	10 22	
Murtagh Coleman, Fulton Street,	12 13	
James Crotty, Fulton Street....	14 63	
Edmond C. Coughlin, Fulton Street	8 66	
Thomas Callahan, Fulton Street..	16 03	
Thomas Carmody, Fulton Street,	10 57	
Catharine Duffy, Fulton Street..	15 52	
John O. Flynn, Fulton Street...	7 64	
Catharine Farrell, Fulton Street,	18 06	
Frances E. Garrity, Fulton Street,	11 43	
Gregoire Gosselin, Fulton Street..	40 54	
Lucy E. Glidden, Fulton Street..	56 00	
Daniel Gage, Fulton Street.....	11 67	
Amounts carried forward.....	$2,564 28	$110,114 04

Amounts brought forward.....	$2,564 28	$110,114 04
Received for SIDEWALK ASSESSMENTS:		
From Daniel Gage, Fulton Street.....	19 54	
Ann Gray, Fulton Street.....	19 50	
Thomas Henry, Fulton Street....	9 95	
Seth B. Hall, Fulton Street.....	23 07	
Seth B. Hall, Fulton Street.....	38 84	
James Jenkins, Fulton Street....	15 58	
James W. Jantzen, Fulton Street,	10 84	
John Kenyon, Fulton Street....	15 76	
Alex. McKee, Fulton Street.....	24 36	
Alex. McKee, Fulton Street.....	52 46	
James Maguire, Fulton Street ..	13 57	
Heirs of C. H. Maloney, Fulton Street	57 20	
Ellen McAnaney, Fulton Street,	19 50	
Ann Noyes, Fulton Street.....	31 43	
John O'Connor, Fulton Street...	11 19	
Michael J. O'Brien, Fulton Street,	12 48	
A. L. Pendergast, Fulton Street..	15 79	
Thomas Pollard, Fulton Street..	15 64	
Simon Roach, Fulton Street.....	12 48	
Michael Reilley, Fulton Street...	19 50	
Bridget Sherlock, Fulton Street,	9 39	
Bridget Smith, Fulton Street....	20 20	
Patrick Shannon, Fulton Street..	11 23	
Agnes T. Shorey, Fulton Street..	1 60	
Agnes T. Shorey, Fulton Street..	4 61	
Albert Viles, Fulton Street.....	39 23	
Albert Viles, Fulton Street.....	21 35	
Albert Viles, Fulton Street.....	58 50	
Albert Viles, Fulton Street.....	26 79	
Albert Viles, Fulton Street.....	24 78	
Albert Viles, Fulton Street.....	9 12	
Albert Viles, Fulton Street.....	35 80	
John Young, Fulton Street.....	9 16	
John Young, Fulton Street	15 48	
John H. Harrington, Fremont Street	30 64	
Charles J. Stuart, Fremont Street,	17 88	
Frank W. Howe, Fairmount Street	105 36	
Frank J. Ladd, Fairmount Street,	51 38	
Amounts carried forward.....	$4,127 27	$110,114 04

Amounts brought forward		$4,127 27	$110,114 04
Received for SIDEWALK ASSESSMENTS:			
From H. J. Ryerson, Fletcher Street		41 08	
Heirs of Josiah Webber, Fletcher Street		22 36	
Charles S. Bean, Gorham Street		27 26	
W. H. Baldwin, Gorham Street		46 24	
Julia A. Field, Gorham Street		41 83	
Margaret A. Fleck, Gorham Street,		37 46	
G. H. & C. A. Gilman, Gorham Street		20 66	
Lowell & Andover Railroad, Gorham Street		1 48	
Thomas Muldoon, Gorham Street,		38 01	
J. G. Marshall, Gorham Street		37 09	
Frederick Lovejoy, Gates Street,		194 67	
Advent Christian Church, Grand Street		16 38	
Phœbe Holmes, Gold Street		46 51	
William Holmes, Gold Street		60 78	
James Scott, Gold Street		62 37	
William Whitmore, Gold Street,		16 97	
Centralville M. E. Church, Hildreth Street		60 22	
Sullivan Holman, Hildreth Street,		12 80	
Elwin S. Lewis, Hildreth Street		5 04	
Elwin S. Lewis, Hildreth Street		54 33	
G. H. Richardson, Hildreth Street,		1 52	
John E. Drury, Hanks Street		22 96	
Elizabeth Rogers, Hanks Street		231 53	
E. A. Smith and F. B. Shedd, Hanks Street		122 47	
E. A. Smith and F. B. Shedd, Hanks Street		72 16	
E. A. Smith and F. B. Shedd, Hanks Street		61 54	
E. A. Smith and F. B. Shedd, Hanks Street		149 68	
John Stott, Hanks Street		54 74	
Boston & Lowell Railroad, Howard Street		218 23	
Boston & Lowell Railroad, Howard Street		276 68	
Amounts carried forward		$5,550 51	$110,114 04

Amounts brought forward	$5,550 51	$110,114 04
Received for SIDEWALK ASSESSMENTS:		
From Joseph S. Grush, Howard Street	52 17	
Old Colony Railroad, Howard Street	54 77	
Old Colony Railroad, Howard Street	34 78	
F. W. Libbey, Harvard Street	26 32	
Charles W. Wilder, Harvard Street	227 14	
Estate Henry Durant, June Street,	61 74	
Estate Henry Durant, June Street,	43 00	
Hugh W. Erdis, June Street	62 30	
Daniel Gage, June Street	71 60	
Daniel Gage, June Street	83 70	
John J. Harvey, June Street	19 35	
William E. Livingston, June Street	43 63	
William E. Livingston, June Street	43 63	
Leroy C. Hall, June Street	21 93	
J. C. Martel, June Street	21 80	
Mead, Mason & Co., June Street,	17 20	
Mead, Mason & Co., June Street,	17 20	
Mead, Mason & Co., June Street,	40 75	
W. K. Stearns, June Street	21 50	
L. R. J. & D. H. Varnum, June Street	104 28	
Katharine Sullivan, Jefferson Street	10 72	
Estate John D. Sullivan, Jefferson Street	9 06	
Estate Thomas McMahon, Livingston Street	50 95	
Margaret Riley, Livingston Street,	66 58	
Mrs. B. Wilby, Livingston Street,	40 24	
Jeffrey Emerson, Laurel Street	56 76	
August Pierson, Laurel Street	21 50	
Sheppard, Russell & Fuller, Laurel Street	117 42	
Sheppard, Russell & Fuller, Laurel Street	160 35	
Amounts carried forward	$7,152 88	$110,114 04

Amounts brought forward.....	$7,152 88	$110,114 04
Received for SIDEWALK ASSESSMENTS:		
From Sheppard, Russell & Fuller, Laurel Street.....	21 50	
Jesse H. Sheppard, Laurel Street,	73 20	
Charles A. Davis, Lawson Street,	16 80	
William Hyde, Lawrence Street,	24 58	
Thomas Hardisty, Lawrence Street	28 20	
George Lee, Lawrence Street....	18 99	
Proprietors of Lowell Cemetery, Lawrence Street.....	392 85	
Owen Fitzpatrick, Lundberg Street	56 80	
William H. Grady, Lundberg Street.....	20 00	
Ambrose Hindle, Lundberg Street	20 00	
Clara W. Harwood, Lundberg Street	18 60	
Alma A. Hunt, Lundberg Street,	20 00	
Alma A. Hunt, Lundberg Street,	19 52	
John Johnson, Lundberg Street,	19 80	
Aaron Jacobs, Lundberg Street,	13 60	
Aaron Jacobs, Lundberg Street,	14 16	
Aaron Jacobs, Lundberg Street,	14 16	
Estate L. B. Moore, Lundberg Street	39 76	
Thomas McCabe, Lundberg Street,	19 40	
Marion Offutt, Lundberg Street,	20 00	
George F. Offutt, Lundberg Street,	20 00	
John C. Pihl, Lundberg Street...	12 68	
August Pihl, Lundberg Street...	20 36	
August Pihl, Lundberg Street...	18 60	
Fred H. Parker, Lundberg Street,	34 80	
Henry Smith, Lundberg Street..	14 00	
Mary A. Sprague, Lundberg Street	20 04	
Samuel C. Tice, Lundberg Street,	12 00	
Samuel C. Tice, Lundberg Street,	12 00	
Samuel Wood, Lundberg Street,	19 64	
Francis S. Berry, Marlborough Street	73 54	
Amounts carried forward.....	$8,282 46	$110,114 04

Amounts brought forward	$8,282 46	$110,114 04
Received for SIDEWALK ASSESSMENTS:		
From Helen M. Cabot, Marlborough Street	31 50	
Lizzie J. Geddis, Marlborough Street	25 20	
Mark Holmes, Jr., & Son, Marlborough Street	25 20	
E. A. Smith, Marlborough Street,	25 20	
E. A. Smith, Marlborough Street,	84 00	
James Smith, Marlborough Street,	25 20	
E. A. Smith, Marlborough Street,	404 70	
Appropriation for Reserved Fund, Mammoth Road	28 47	
Estate James C. Ayer, Mammoth Road	120 29	
Louis P. Lamothe, Mammoth Road	50 45	
Pawtucket Church, Mammoth Road	114 39	
Isadore Turcotte, Mammoth Road	18 96	
George F. Goode, May Street	46 21	
G. S. Hovey, Middlesex Street	90 34	
Frank E. Putnam, Middlesex Street	47 09	
Appleton National Bank, New School Street	23 48	
Arthur E. Bagshaw, New School Street	31 36	
L. H. Butterfield, New School Street	29 48	
William Dugdale, New School Street	23 85	
Ellen C. Dexter, New School Street	23 40	
Curtis McEwan, New School Street	14 04	
Samuel G. Parker, New School Street	21 29	
James N. Scott, New School Street	14 00	
Carrie A. Scribner, Nichols Street,	70 07	
Amounts carried forward	$9,670 63	$110,114 04

Amounts brought forward.....	$9,670 63	$110,114 04
Received for SIDEWALK ASSESSMENTS:		
From Margaret and Ann Fields, Pond Street	46 37	
Jane Fisher, Pond Street.....	22 26	
George E. Pierce, Pond Street..	28 78	
James E. Ryder, Pollard Street..	33 02	
S. K. Dexter, Pollard Street.....	13 64	
W. H. Downs, Porter Street....	24 49	
George R. Davis, Porter Street..	30 95	
Frank B. Dow, Porter Street....	59 08	
F. X. A. Hurtubise, Porter Street,	37 53	
Charles C. Hutchinson, Porter Street	89 45	
D. Moody Prescott, Porter Street,	47 00	
Mary B. Richardson, Porter Street,	30 96	
Charles A. Stott, Porter Street..	87 44	
Appropriation for Public Buildings, Palmer Street.....	39 54	
Estate of Martin Giblin, Palmer Street.....	57 47	
Julia McCarty, Palmer Street....	64 97	
S. A. and J. M. Bennett, Pine Street.....	33 68	
Richard Ingham, Pine Street....	29 51	
Thomas W. Boddy, River Street,	13 45	
Bridget Carney, River Street....	12 84	
Joseph Clark, River Street.....	15 39	
John Davis, River Street.....	14 52	
Thomas Duffy, River Street.....	17 29	
Charles J. Francis, River Street..	17 78	
Gregoire Gosselin, River Street..	13 03	
Thomas Lyons, River Street.....	13 83	
Thomas McLaughlin, River Street,	13 94	
Jane O'Toole, River Street.....	8 13	
Luke O'Connell, River Street....	41 40	
John W. Pead, River Street.....	16 61	
Estate of J. M. G. Parker, River Street	16 27	
Charles Roughan, River Street..	7 11	
Charles F. Libbie, Robbins Street,	12 68	
Charles F. Libbie, Robbins Street,	27 50	
John C. Wilson, Ralph Street....	161 53	
Amounts carried forward.....	$10,870 07	$110,114 04

Amounts brought forward	$10,870 07	$110,114 04
Received for SIDEWALK ASSESSMENTS:		
From Herbert A. Rugg, Rock Street	46 09	
Society of Oblate Fathers, Stackpole Street	82 83	
Mrs. Marcus D. Cole, School Street	34 29	
William Barber, South Whipple Street	8 21	
Miles F. Brennan, South Whipple Street	41 15	
Richard Cuff, South Whipple Street	9 77	
Thomas Fennelly, South Whipple Street	6 63	
James Gunn, South Whipple Street	9 77	
John Fahey, South Whipple Street	9 31	
William Gaunt, South Whipple Street	10 11	
Thomas J. Giles, South Whipple Street	29 68	
S. Greenwood and J. Jaques, South Whipple Street	40 17	
Greenwood Bros., South Whipple Street	39 37	
William H. Holgate, South Whipple Street	9 27	
Enoch Lord, South Whipple Street	18 58	
Lowell Five Cent Savings Bank, South Whipple Street	18 58	
Lowell & Dracut Street Railway, South Whipple Street	4 72	
Thomas Martin, South Whipple Street	9 27	
John Monson, South Whipple Street	17 06	
John Monson, South Whipple Street	5 81	
Francis McDermott, South Whipple Street	9 27	
Amounts carried forward	$11,330 01	$110,114 04

Amounts brought forward.....	$11,330 01	$110,114 04
Received for SIDEWALK ASSESSMENTS:		
From Nicholas Pierson, South Whipple Street.....	9 77	
Martin E. Pihl, South Whipple Street.....	28 08	
George C. Smith, South Whipple Street.....	9 77	
William T. Sutcliffe, South Whipple Street.....	9 77	
Julia A. Scott, South Whipple Street.....	14 02	
J. B. Stewart and B. Bell, South Whipple Street.....	9 73	
James Small, South Whipple Street.....	10 72	
Bernard Tully, South Whipple Street.....	9 27	
James F. Taylor, South Whipple Street.....	9 27	
Anders Thomasson, South Whipple Street.....	16 91	
Anders Thomasson, South Whipple Street.....	16 83	
Thomas Walshaw, South Whipple Street.....	9 77	
Robert Winn, South Whipple Street.....	9 27	
Heirs of O. M. Whipple, South Whipple Street.....	38 72	
Henry C. Brothers, South Hastings Street.....	25 81	
E. W. Lachance, South Hastings Street.....	33 17	
Henry J. Maguire, South Hastings Street.....	39 79	
George F. Penniman, South Hastings Street.....	29 60	
William Roberts, South Hastings Street.....	32 96	
I. O. Ramsdell, South Hastings Street.....	39 75	
Amounts carried forward.....	$11,732 99	$110,114 04

Amounts brought forward.....	$11,732 99	$110,114 04
Received for SIDEWALK ASSESSMENTS:		
From Lewis Spellman, South Hastings Street.....	39 75	
Charles H. Stevens, South Hastings Street.....	33 09	
Mrs. C. F. Stott, South Hastings Street.....	40 63	
Mrs B. F. Simpson, Simpson Street.....	88 53	
Ellen Harnden, Sherman Street..	45 66	
James Gookin, Sherman Street..	37 76	
George W. Raynes, Sherman Street.....	31 92	
Philip Lynch, Swift Street.....	68 26	
Proprietors of Locks & Canals, Suffolk Street.....	32 73	
Proprietors of Locks & Canals, Suffolk Street.....	62 33	
Proprietors of Locks & Canals, Suffolk Street.....	67 75	
Proprietors of Locks & Canals, Suffolk Street.....	34 81	
Proprietors of Locks & Canals, Suffolk Street.....	40 91	
Proprietors of Locks & Canals, Suffolk Street..... ..	115 90	
Proprietors of Locks & Canals, Suffolk Street.....	41 24	
Proprietors of Locks & Canals, Suffolk Street.....	68 22	
Proprietors of Locks & Canals, Suffolk Street.....	87 06	
Proprietors of Locks & Canals, Suffolk Street.....	23 88	
Proprietors of Locks and Canals, Suffolk Street.....	39 66	
Charles P. Stanton, Suffolk Street,	28 27	
Thomas Carey, Stanley Street...	50 71	
John Blinkhorn, Stanley Street..	41 84	
Matthew J. Bailey, Stanley Street,	29 08	
John F. Joyce, Stanley Street....	15 88	
John Kennedy, Stanley Street...	16 00	
Amounts carried forward...	$12,914 86	$110,114 04

Amounts brought forward.....	$12,914 86	$110,114 04
Received for SIDEWALK ASSESSMENTS:		
From Patrick Kilbride, Stanley Street..	24 72	
Maxime Lepine, Stanley Street..	15 12	
Ann McCarry, Stanley Street....	17 04	
Thomas McCormack, Stanley Street	16 28	
Mederic Moreau, Stanley Street..	13 32	
Mrs. Jane O'Toole, Stanley Street,	52 47	
Estate of J. M. G. Parker, Stanley Street.....	53 05	
James E. Ready, Stanley Street..	13 32	
James Reynolds, Stanley Street..	16 00	
John Sullivan, Stanley Street....	16 80	
Ellen Sweeney, Stanley Street...	12 84	
Thomas Smith, Stanley Street...	68 00	
Lydia A. Spaulding, Stanley Street	15 84	
Lafayette M. Towns, Stanley Street	18 04	
William A. Pheasey, Stanley Street	16 40	
William H. Parker, Stanley Street,	10 52	
Sylvester Sullivan, Stanley Street,	11 60	
Estate of L. E. Shepard, Stanley Street	12 08	
Criterion Knitting Co., Tanner Street	52 62	
D. M. Edwards, Tanner Street...	37 80	
Emily J. Clifford, Talbot Street..	46 99	
Mrs. E. A. Nichols, Talbot Street,	47 70	
Mrs. J. W. Robbins, Talbot Street,	27 50	
Ira M. Chase, Tremont Street....	87 29	
Thomas E. Allen, West Street...	16 29	
Samuel Barlow, West Street.....	25 33	
John Brooks, West Street.....	16 80	
Henry Barnes, West Street.....	12 64	
Maria E. Corsair, West Street...	11 34	
M. E. and K. A. Daley, West Street	13 48	
Edwin S. Eastman, West Street..	13 94	
Asa Gower, West Street.....	14 28	
Charles R. Hoyt, West Street....	17 56	
Amounts carried forward.....	$13,759 86	$110,114 04

Amounts brought forward	$13,759 86	$110,114 04
Received for SIDEWALK ASSESSMENTS:		
From Edward and Mary Leamey, West Street	22 09	
Thomas McKenna, West Street	16 25	
William Monty, West Street	12 60	
Edward McArdell, West Street	46 62	
James McLaughlin, West Street,	13 94	
George H. Pheasey, West Street,	11 97	
Philip Pender, West Street	26 08	
John Riley, West Street	11 72	
Stephen Sargent, West Street	15 96	
Humphrey Sullivan, West Street,	15 54	
Michael Tarpey, West Street	10 37	
Clarence A. Upton, West Street,	26 67	
Mrs. Patrick Williams, West Street	12 47	
Sarah T. Whitney, West Street	52 33	
John Young, West Street	14 99	
Alexander Moir, West Sixth Street	8 93	
Alexander Moir, West Sixth Street	10 15	
Joseph Rogers, West Sixth Street,	13 94	
Albert Viles, West Sixth Street	21 81	
Albert Viles, West Sixth Street	46 17	
James Wallace, West Sixth Street,	20 41	
Appropriation for School-houses, West Sixth Street	20 90	
Sarah F. Wilson, West Sixth Street	18 39	
A. H. Cluer, Wachusett Street	36 42	
Foster P. Carroll, Wachusett Street	29 80	
Joseph A. Garmon, Wachusett Street	33 28	
John S. Marion, Wachusett Street,	60 04	
A. T. Richardson, Wachusett Street	33 62	
Highland Congregational Church, Westford Street	33 16	
Elizabeth Ryan, Westford Street,	20 32	
E. A. Smith, Westford Street	50 65	
Amounts carried forward	$14,527 45	$110,114 04

Amounts brought forward.....	$14,527 45	$110,114 04
Received for SIDEWALK ASSESSMENTS:		
From Heirs of F. A. Hildreth, Walnut Street	66 95	
Lorenzo Grace, Wilder Street....	33 13	
		14,627 53
		$124,741 57
Transferred from Appropriation for Sewers and Drains.....		561 02
		$125,302 59

EXPENDITURES.

Paid SUPERINTENDENT OF STREETS AND CIVIL ENGINEER:		
To Horace P. Beals, Superintendent of Streets, salary.....	$1,800 00	
George E. Evans, Civil Engineer, salary.....	2,500 00	
		$4,300 00
Paid Sundry persons for LABOR, AS PER PAY-ROLLS:		
In January.....	$5,451 64	
February.....	3,386 33	
March	4,174 39	
April	4,709 38	
May	7,078 62	
June.....	5,835 15	
July.....	5,137 83	
August	6,765 88	
September	5,201 14	
October.....	5,786 90	
November	7,182 14	
December	3,437 94	
		64,147 34
Amount carried forward....		$68,447 34

Amount brought forward.....			$68,447 34
Paid for FUEL:			
To Appropriation for Paupers, for wood,		$ 2 00	
D. W. Horne & Son, for coal.....		206 78	
Howard & Wilson, for coal.....		29 50	
William E. Livingston, for coal ...		36 32	
			274 60
Paid for HAY, GRAIN, ETC.:			
To Joseph Bowers, for hay.....		$162 13	
John Buchanan, for hay.....		23 02	
B. M. Blake, for oats.....		10 80	
O. Bartlett, for oats.....		19 21	
J. B. Cover & Co., for oats and corn,		362 42	
J. F. Chandler, for oats.....		12 00	
W. O. Cummings, for oats and hay,		65 56	
Milton Fox, for hay.....		108 85	
Fred A. Fox, for hay.....		91 74	
William P. Foye, for oats and corn,		102 59	
C. H. Hanson & Co., for oats.....		199 84	
C. H. Hanson, for straw, hay, oats, etc.		174 67	
E. S. Howe, for hay.....		107 58	
H. A. Jones, for hay.....		119 43	
George G. Kelly, for hay.....		34 83	
William E. Livingston, for oats, corn, cattle food, etc.....		452 78	
T. J. McDonald, for oats and corn,		716 07	
J. S. McIlvaine, for hay.....		198 22	
Joseph Miller, for oats, meal, and shorts		240 30	
H. E. Parker, for hay.....		160 38	
A. G. Stiles & Co., for hay.....		65 80	
E. S. Sherman & Co., for oats, hay, and meal.....		217 12	
C. D. Starbird, for hay and pasturing horses.....		187 33	
John Trull, for hay.....		299 62	
George W. Trull, for hay.....		253 20	
T. J. Underwood, for hay.....		197 93	
Thomas Varnum, for hay.....		201 24	
E. N. Wood & Co., for oats, straw, corn, and salt.....		585 87	
Amounts carried forward.....		$5,370 53	$68,721 94

Amounts brought forward.....	$5,370 53	$68,721 94
Paid for HAY, GRAIN, ETC.:		
To O. D. Wilder, for meal and shorts..	315 49	
John C. Woodward, for hay.....	156 52	
		5,842 54
Paid for LUMBER, STONE, BRICK, CEMENT, ETC.:		
To Otis Allen & Son, for sawdust.....	$ 6 00	
A. L. Brooks & Co., for lumber....	7 72	
A. P. Bateman, for lumber..... ..	142 39	
Burnham, Forrest & Davis, for lumber.....	478 94	
Badger & Kimball, for lumber.....	9 35	
Davis & Sargent, for lumber	578 40	
Howe Bros. & Co., for lumber.....	879 16	
Hamilton Manufacturing Co., for lumber.....	8 75	
Mark Holmes, Jr., & Son, for lumber,	19 25	
Amasa Pratt & Co., for lumber....	391 91	
Proprietors of Locks & Canals, for kyanizing lumber.....	35 42	
W. H. Ward, for lumber and labor,	142 00	
C. J. Cheney, Jr., for pipe.....	11 39	
Edward Cawley, for pipe.....	12 49	
J. W. Bennett, for sand.....	8 75	
William E. Livingston, for brick and cement	166 14	
Increase Richardson, for sand.....	23 20	
John A. Simpson, for dirt.....	4 50	
E. A. & A. T. Smith, for concrete..	4,832 19	
H. E. Fletcher & Co., for flagging..	959 46	
William Reed, for edgestone.....	8,382 57	
Sweatt & Davis, for circle stone...	421 33	
		17,521 31
Paid for HARDWARE, TOOLS, ETC.:		
To Charles E. Adams, for hardware....	$57 32	
American Bolt Co., for bolts, castings, etc.....	67 03	
Amounts carried forward.....	$124 35	$92,085 79

Amounts brought forward	$124 35	$92,085 79	
Paid for HARDWARE, TOOLS, ETC.:			
To Bartlett & Dow, for hardware	89 50		
J. C. Bennett, for hardware and paint	18 86		
Boutwell Bros., for chain, anvil, iron, and steel	663 06		
Clarence G. Coburn, for shovels	60 90		
H. B. Shattuck, for hardware	84 68		
Frederick Taylor Co., for hardware,	86 12		
		1,127 47	
Paid for HORSES, CARRIAGES, HARNESSES, ETC.:			
To American Bolt Co., for horse	$ 250 00		
Charles Clapp, for horses	775 00		
C. H. Hanson, for horses, and exchange of horses	1,625 75		
Abbot Downing Co., for gears for street sweeper	7 00		
H. J. Draper & Co., for painting wagon	17 50		
Fay Bros. & Hosford, for repairing carriages	15 72		
Sawyer Carriage Co., for carriages exchanged, and repairing carriages	268 94		
T. M. Bolton & Co., for repairing harnesses	20 50		
Willard A. Brown, for thread, wax, and blacking	4 30		
Moses Charron, for repairing harness	3 50		
J. E. Conant & Co., for whips	2 75		
Dyar & Patterson, for boot, brushes, etc	37 40		
H. F. Ebert, for feed bags, collar, and repairing harnesses	27 71		
Josiah Gates & Son, for leather	15 40		
Hill & Langtry, for harness trimmings	8 66		
Amounts carried forward	$3,080 13	$93,213 26	

Amounts brought forward	$3,080 13	$93,213 26
Paid for HORSES, CARRIAGES, HARNESSES, ETC.:		
To E. Hapgood & Son, for hair	9 03	
A. W. Mead, for brushes, blankets, whips, leather, etc.	25 35	
A. Nourbourne, for repairing carriage	9 50	
H. J. O'Dowd, for bandages	50	
Charles W. Sabin, for leather	177 19	
		3,301 70
Paid for LAND, DAMAGES, ETC.:		
To Henry Edwards, for injury to horse,	$ 32 50	
Ada B. Glidden, for damage to property on Mammoth Road	75 00	
James Nixon, for damage to wagon,	30 00	
B. F. Shaw, for land taken in laying out Hutchinson street	100 00	
		237 50
Paid for PAVING:		
To Sundry persons, for labor as per payrolls	$4,486 26	
C. A. Bailey, for paving blocks	9,513 05	
T. L. Downs, for paving blocks	86 94	
H. E. Fletcher & Co., for paving blocks	8,519 76	
Miller & Luce, for paving blocks	52 80	
R. A. Shugroe, for paving blocks	192 32	
J. W. Bennett, for sand	9 75	
William E. Livingston, for cement,	5 00	
S. H. Weaver & Son, for sand	36 25	
Charles E. Adams, for hardware and shovel	1 00	
Perrin, Seamans & Co., for rammer,	8 00	
C. B. Coburn & Co., for oil	6 13	
J. F. Chandler, for teaming	89 00	
E. Duren, for teaming	50 00	
A. H. Falls, for teaming	104 00	
Amounts carried forward	$23,160 26	$96,752 46

Amounts brought forward	$23,160 26	$96,752 46

Paid for PAVING:

To James P. Fowler, for teaming.....	83 00	
C. H. Hanson, for teaming.....	20 00	
R. M. Hills, for teaming.....	71 00	
Pendexter & Farley, for teaming..	293 00	
V. E. Robey, for teaming.....	14 00	
Bernard Riley, for teaming.....	166 00	
Zephirin Roux, for teaming.....	106 00	
Charles Clapp, for teaming.....	18 00	
O. A. Simpson, for teaming.....	12 00	
C. G. Thurston, for teaming.....	8 00	
C. H. Whitney, for teaming.....	224 00	
Redmond Welch, for teaming.....	169 00	
		24,344 26

Paid for SUNDRIES:

To Appropriation for Reserved Fund, for services of Assistant Engineers,	$ 80 00	
Appropriation for Public Buildings, for labor and materials.....	7 01	
Appropriation for Water Works, for water.....	223 15	
Lowell Gas Light Co., for gas.....	268 51	
New England Telephone & Telegraph Co., for service, and bill paid twice	71 80	
Eastern Electric Light & Storage Battery Co., for wire.....	2 80	
H. R. Barker Manufacturing Co., for fittings and labor.....	3 55	
T. Costello & Co., for pipe, fittings, and labor.....	47 54	
Farrell & Conaton, for valves and plugs	2 29	
W. A. Mack & Co., for pails, dippers, and sprinklers.....	4 30	
W. W. Carey, for repairing surveyors' rods.....	4 68	
Richard Dobbins, for iron, labor, and steel.....	46 39	
Amounts carried forward	$762 02	$121,096 72

Amounts brought forward	$762 02	$121,096 72
Paid for SUNDRIES:		
To Edson Manufacturing Co., for diaphragms and repairing street-sweepers	111 19	
Farrell Foundry & Machine Co., for plates	30 86	
James E. Moody, for repairing surveyors' instruments	5 90	
A. Nourbourne, for labor	2 00	
J. L. Phillips & Co., for recutting files,	3 16	
Nason B. Parsons, for filing saws	25 91	
Ellis Thayer & Son, for repairing street-sweeper	24 52	
Charles I. Taylor & Co., for repairing draughting board	23 85	
N. J. Wier & Co., for scoops	31 50	
C. Zimmer, for repairing locks and fitting keys	3 75	
American Dressing Co., for harness soap	10 00	
Borne, Scrymser & Co., for oil	31 58	
D. A. Brown, for broom material	18 72	
Carleton & Hovey, for medicine	35	
C. B. Coburn & Co., for rope, oil, glue, alcohol, etc.	302 00	
Thomas H. Clough, for oil	10 00	
C. G. Coburn, for salt and oil	4 50	
A. C. Daniels, for medicine	11 00	
Donovan & Co., for forcite and exploders	117 95	
Ellingwood & Co., for elatol, liniment, etc.	19 45	
A. H. Kittredge, for dualin	2 80	
C. B. Merrill, for harness dressing	3 00	
William Nichols & Co., for fuse, mustard, ginger, and dualin	46 14	
Walter H. Stackpole, for liniment	6 80	
H. O. Stevenson, for medicine	8 00	
Scollay & Rich, for polishing paste,	5 58	
W. H. Spalding & Co., for paste, oil, and paper	13 38	
Sutherland Liniment Co., for liniment	3 00	
Amounts carried forward	$1,638 91	$121,096 72

Amounts brought forward	$1,638 91	$121,096 72
Paid for SUNDRIES:		
To Talbot Dyewood Co., for sulphur and borax	7 57	
White Mountain Axle Oil Co., for axle oil	9 00	
Page Belting Co., for hose and couplings	24 25	
Middlesex Steam Laundry, for laundering towels	32	
A. G. Pollard & Co., for cotton cloth, ticking, cloaking, etc.	15 89	
Quinlan & Washburn, for enameled cloth	50	
Bacheller, Dumas & Co., for blank books	13 75	
Frank Carolan, for blank books	1 80	
H. C. Church & Son, for pencils and blank books	13 69	
Citizen Newspaper Co., for blank books and envelopes	10 25	
Hooper, Lewis & Co., for blank books	2 50	
A. L. Kittredge, for paper and ink,	2 03	
J. Merrill & Son, for rubber bands and pens	5 40	
F. E. Rollins, for typewriting	50	
Vox Populi Press, for blank books,	17 25	
Thos. C. Lee, Agent, for insurance,	75 00	
Lowell Rubber Co., for gloves	2 00	
H. P. Beals, for mileage book and expenses of committee	31 00	
T. S. Buck, for flexible type, ink, and pad	4 20	
George E. Evans, for needles, tape, postage, etc.	14 63	
William H. Harrigan, for broom material	6 00	
George G. Spofford, for hammer handles	2 00	
C. W. Cheney, for lunches	2 65	
Josiah T. Corner, for stencil	3 00	
Spencer & Redmond, for signs	3 75	
Spencer & Co., for signs	3 00	
Amounts carried forward	$1,910 84	$121,096 72

Amounts brought forward	$1,910 84	$121,096 72
Paid for SUNDRIES:		
To A. W. Baker, for veterinary dentistry	24 00	
W. A. Sherman, for professional services	22 50	
J. H. Sparks, for professional services	20 00	
Robert Wood, for professional services	3 00	
Coburn & Crosby, for mason work,	3 00	
Edward Dugdale, for lumber and labor	9 62	
Proprietors of Locks & Canals, for construction of arch over Merrimack Canal on Merrimack Street	1,613 47	
Town of Dracut, for taxes of 1890,	28 00	
James P. Fowler, for teaming	105 00	
R. M. Hills, for teaming	42 00	
C. H. Hanson, for teaming	85 50	
Peter Latour, for teaming	52 00	
V. E. Roby, for teaming	1 00	
Pendexter & Farley, for teaming	105 00	
R. D. Snow, for teaming	58 00	
Chase & Hunton, for teaming	14 00	
Morse & Sparks, for carriage hire	53 50	
American Express Co., for transportation	1 05	
Lovejoy-Paul Express Co., for transportation	1 75	
New England Despatch Co., for transportation	25	
Boston & Maine Railroad, Lowell System, for transportation	52 12	
Boston & Maine Railroad, for transportation	27	
		4,205 87
Total expenditure for the year 1890		$125,302 59

PALMER STREET.

Balance undrawn Jan. 1, 1890	$ 7,011 95	
Balance overdrawn Dec. 31, 1890	14,700 91	
		$21,712 86

EXPENDITURES.

Paid for SUNDRIES:

To William P. Foye, on execution	$ 9,577 86	
Michael Horan, on execution	12,000 00	
Henry Lannan, for amount paid for old building	25 00	
Alfred Barney, for services as appraiser	10 00	
Francis Carll, for services as appraiser	10 00	
Charles P. Conant, for services as appraiser	25 00	
E. Dearborn, for services as appraiser	10 00	
E. S. Foss, for services as appraiser,	10 00	
S. B. Harris, for services in case of Foye v City	10 00	
William H. Parker, for services as appraiser	20 00	
J. G. Peabody, for services as appraiser	15 00	
Total expenditure for the year 1890		$21,712 86

EXTENSION OF PALMER STREET.

Balance undrawn, Jan. 1, 1890.....	$75,000 00	
		$75,000 00

RECEIPTS.

Received into the treasury on account of EXTENSION OF PALMER STREET:		
From J. E. Conant & Co., for amount received for old material, less commission and cost of advertising...	$335 15	
		335 15
		$75,335 15

EXPENDITURES.

Paid for SUNDRIES:		
To Sundry persons, for labor as per payrolls	$1,058 23	
Appropriation for Roads and Bridges, for labor, steel, and teaming	457 89	
Appropriation for Public Buildings, for labor.....	4 75	
Amount carried forward	$1,520 87	

Amount brought forward	$1,520 87	
Paid for SUNDRIES:		
To Frederick Taylor Co., for hardware and tools	6 82	
H. E. Fletcher & Co., for stone	1,261 94	
J. W. Bennett, for sand	7 25	
William E. Livingston, for cement,	15 60	
S. H. Weaver & Son, for sand	4 00	
Harrison W. Streeter, for serving notices	3 00	
Alfred Barney, for services as appraiser	25 00	
Francis Carll, for services as appraiser	25 00	
E. Dearborn, for services as appraiser	20 00	
E. S. Foss, for services as appraiser,	25 00	
Simon B. Harris, for services as appraiser	15 00	
P. O'Hearn, for services as appraiser,	20 00	
M. G. Perkins, for services as appraiser	25 00	
A. H. Sanborn, for view of street	6 00	
J. H. Sheppard, for services as appraiser	30 00	
Total expenditure for the year 1890		$ 3,010 48
Balance undrawn Dec. 31, 1890		72,324 67
		$75,335 15

RESERVED FUND.

Balance undrawn Jan. 1, 1890	$ 6,499 12	
Appropriation	40,000 00	
		$46,499 12

RECEIPTS.

Received into the treasury on account of RESERVED FUND:

From Appropriation for Schools, for coal	$ 409 43	
Appropriation for Roads and Bridges, for coal	80 00	
Appropriation for Police, for coal,	107 61	
Appropriation for Fire Department, for coal	155 80	
Appropriation for Sewers and Drains, for services of Assistant Engineers	46 17	
Appropriation for Water Works, for services of Assistant Engineers	62 55	
Appropriation for City Hall and Memorial Building, for services of City Engineer and Assistants	47 48	
Appropriation for Pawtucket Boulevard, for services of City Engineer and Assistants	159 75	
Amounts carried forward	$1,068 79	$46,499 12

Amounts brought forward	$1,068 79	$46,499 12
Received into the treasury on account of RESERVED FUND:		
From Appropriation for Improvement of Andover Street Sewer System, for services of City Engineer and Assistants	38 75	
Commonwealth, for rent of Armories for 1890	1,385 00	
Commonwealth, for burial of soldiers	17 50	
County of Middlesex, for rent of Police Court Room	750 00	
Carleton & Hovey, for rent of store in City Hall Building	1,200 00	
J. H. Guillet, for rent of store in City Hall Building	975 00	
C. F. Going, for rent of Huntington Hall	1,771 25	
Burns Club, for rent of Huntington Hall	25 00	
Lowell Lodge of Elks, for rent of Huntington Hall	45 00	
Lowell Caledonian Club, for rent of Huntington Hall	25 00	
St. Anne's Church, for rent of Huntington Hall	50 00	
St. Joseph's Church, for rent of Huntington Hall	35 00	
St. Peter's Church, for rent of Huntington Hall	25 00	
Veteran Firemen's Association	30 00	
Austin K. Chadwick, City Treasurer, for witness fees, costs on warrants, etc	7 45	
Austin K. Chadwick, City Treasurer, for liquor licenses	39 75	
Van B. Sleeper, City Treasurer, for costs on warrants and advertising sale of property, for non-payment of taxes	178 40	
Andrew G. Stiles, for witness fees	1 60	
Amounts carried forward	$7,668 49	$46,499 12

Amounts brought forward.....	$7,668 49	$46,499 12
Received into the treasury on account of RESERVED FUND:		
From Girard P. Dadman, City Clerk, for marriage certificates, naturalization papers, licenses, recording, etc.....	2,961 39	
F. A. Bates, for sale of graves, etc., at Edson Cemetery....	110 00	
M. V. Davis, for care of lots and sale of hay at Edson Cemetery.....	399 87	
J. R. Fulton, Sealer of Weights and Measures.....	236 60	
Samuel Hanson, Milk Inspector, for licenses.....	98 00	
Richard J. Noonan, Superintendent of City Scales, for fees...	348 53	
Richard J. Noonan, Measurer of Wood and Bark, for fees....	160 30	
Boston & Maine Railroad, for sealing and adjusting scales,	4 75	
C. F. Hatch, for overdraft.....	10 50	
Lowell Standard Cab & Hack Co., for overdraft.....	3 50	
Thomas Nesmith, for tax, costs, and interest on estate James A. Hadley.....	30 13	
George C. Prince, for tax, costs, and interest on estate James A. Hadley.....	107 43	
Amanda J. Patten, for tax of 1888 abated before payment.....	6 28	
V. Simpson, for redemption of tax title on property situated on River Street taxed to John W. Read, which was sold for non-payment of taxes.....	136 32	
The following persons for licenses as hawkers:		
A. Barlofsky.....	25 00	
Lewis Brams.....	25 00	
Barnet Berenson.....	25 00	
Amounts carried forward.....	$12,357 09	$46,499 12

Amounts brought forward.....	$12,357 09	$46,499 12
Received into the treasury on account of RESERVED FUND:		
From the following persons for licenses as hawkers:		
Abraham Cohen.....	50 00	
Harris Carp.....	25 00	
Nathan A. Carp.....	25 00	
Joseph Frin.....	25 00	
Harris Falk.....	25 00	
Heich Goldberg.....	25 00	
I. Goldis.....	25 00	
Mark Grosberg.....	25 00	
Julius Goldman.....	25 00	
Moses Horlink.....	25 00	
Morris Ralston.....	25 00	
Samuel Silheblate.....	25 00	
Moses Wolfk.....	25 00	
		12,707 09
		$59,206 21

EXPENDITURES.

Paid MEASURER OF WOOD AND BARK AND SUPERINTENDENT OF CITY SCALES:		
To Richard J. Noonan, Measurer, salary	$600 00	
Richard J. Noonan, Superintendent, salary	200 00	
		$800 00
Amount carried forward		$800 00

Amount brought forward.....		$800 00
Paid for services of CLERKS, JANITORS, ETC.:		
To Hubert M. Potter, for services as clerk, for State Aid Committee,	$1,008 00	
William P. McCarthy, for services as Assistant City Clerk.....	897 52	
Belle C. Hill, for services in City Clerk's Office.....	546 00	
Andrew G. Stiles, for services in City Treasurer's office.....	897 52	
Stephen C. Gallagher, for services in City Treasurer's office.....	697 84	
Joseph Farrell, for services in City Treasurer's office.....	432 00	
Ralph W. Foote, for services in City Treasurer's office.....	328 00	
William J. Reardon, for services in City Treasurer's office.....	228 00	
Albert W. Mann, for examining the accounts of the City Treasurer,	322 80	
Thomas P. Sullivan, for services in City Auditor's office.....	607 50	
Stephen J. Kirby, for services as clerk of the Board of Assessors,	1,395 90	
William J. Reardon, for services as clerk in Assessors' office.....	663 00	
J. Frank Burrill, for services as clerk in Assessors' office.....	381 25	
Henry H. Carroll, for services as clerk in Assessors' office.....	232 50	
Henry F. Harris, for services as clerk in Assessors' office.....	217 50	
Fred W. Coburn, for services as clerk in Assessors' office.....	205 00	
William J. Leonard, for services as clerk in Assessors' office.....	220 00	
John J. Tobin, for services as clerk in Assessors' office.....	195 00	
Duane P. Stacy, for services as clerk in Assessors' office.....	36 75	
Michael H. McCue, for services as clerk in Assessors' office.....	12 25	
Amounts carried forward.....	$9,524 32	$800 00

Amounts brought forward	$9,524 32	$800 00
Paid for SERVICES OF CLERKS, JANITORS, ETC.:		
To Michael H. McCue, for services as clerk in Registrars' office	153 75	
Matthew H. Gilroy, for services as clerk in Registrars' office	85 00	
William J. Leonard, for services as clerk in Registrars' office	60 00	
J. Frank Burrill, for services as clerk in Registrars' office	58 75	
Henry H. Carroll, for services as clerk in Registrars' office	70 00	
J. W. B. Shaw, for services as Probation Officer	433 33	
Edward McNamara, for services as Janitor at City Hall	728 00	
John McNamara, for labor at City Hall	31 50	
Briscoe W. Root, for labor at City Hall	170 10	
William R. Rice, for labor at City Hall	6 00	
Kate Sullivan, for labor at City Hall	576 00	
Mary Sullivan, for labor at City Hall	173 60	
Mrs. Cunningham, for labor at City Hall	3 60	
		12,073 96
Paid for SERVICES OF WARD OFFICERS:		
To Sundry persons, for services as Ward Officers as per pay-rolls	$2,295 00	
		2,295 00
Paid for FUEL:		
To Appropriation for Schools, for coal,	$ 11 76	
Appropriation for Roads and Bridges, for teaming coal and building coal shed	261 77	
Amounts carried forward	$273 53	$15,168 96

Amounts brought forward	$ 273 53	$15,168 96
Paid for FUEL:		
To Appropriation for Paupers, for coal and wood	52 09	
Cawley Bros., for coal	456 30	
William E. Livingston, for coal	2,630 04	
		3,411 96
Paid for DAMAGES, COSTS, ETC:		
To Appropriation for Roads and Bridges, for services of Engineer and Assistants	$ 34 50	
Appropriation for Police, for services of Officer McDonald	1,058 75	
Larkin T. Trull, for services in sundry cases	446 65	
John J. Pickman, for professional services	10 00	
Frank N. Owen, for services as stenographer at Fire Inquest	77 15	
G. J. Bradt, for professional services	50 00	
William Bass, for professional services	75 00	
James Marren, for services as appraiser	3 00	
Sundry persons, for services as witnesses at Fire Inquest	32 40	
George F. Stiles for serving notices	6 50	
Harrison W. Streeter, for serving notices	6 00	
George E. Crosby & Co., for briefs,	20 00	
F. B. Hard, for typewriting	15 95	
F. E. Rollins, for typewriting	14 57	
A. H. Sanborn & Co., for photographs	21 75	
George A. Chase, on execution	3,751 15	
E. M. Haskell, for serving notices	52 26	
William H. Parker, for amount overpaid on taxes	22 59	
Amounts carried forward	$5,698 22	$18,580 92

Amounts brought forward	$5,698 22	$18,580 92
Paid for DAMAGES, COSTS, ETC.:		
To Vox Populi Press, for advertising tax sales and printing lists	89 90	
		5,788 12
Paid for COSTS, ETC., IN CORPORATION TAX CASES:		
To George F. Goode, for services as expert	$ 20 00	
William S. Knox, for professional services	590 00	
F. E. Rollins, for typewriting	12 15	
		622 15
Paid for SUNDRIES AT BURIAL GROUNDS:		
To M. V. Davis, Superintendent, for labor, postage, etc	$ 914 90	
Sundry persons, for labor, as per pay-rolls	1,244 51	
Appropriation for Roads and Bridges, for services of Engineer and assistants	36 32	
Appropriation for Public Buildings, for labor and material	5 59	
Appropriation for Water Works, for water	87 75	
Appropriation for Water Works, for pipe, fittings, and labor	49 96	
E. Sheppard & Sons, for plants and shrubs	213 68	
D. W. Clement, for trees	27 50	
H. S. Foster, for trees	25 00	
William E. Livingston, for lawn-dressing	4 00	
James McFarlin, for loam and labor,	18 00	
A. P. Bateman, for lumber	3 91	
Bartlett & Dow, for rakes and hoes,	2 80	
Amounts carried forward	$2,633 92	$24,991 19

Amounts brought forward	$2,633 92	$24,991 19
Paid for SUNDRIES AT BURIAL GROUNDS:		
To T. Costello & Co., for stove, pipe, chain, and hooks	16 75	
Joel Knapp & Son, for repairing lawn-mower	2 75	
Fay Bros. & Hosford, for hand-cart,	19 75	
Adams & Co., for felt	35	
C. B. Coburn & Co., for sulphur	16	
George B. Fuller, for labor and teaming	78 00	
Spencer & Redmond, for signs	4 29	
		2,755 97
Paid for SUNDRIES AT HUNTINGTON HALL:		
To Sundry persons, for labor, as per payrolls	$1,722 93	
Charles F. Going, for services as janitor	910 00	
Appropriation for Police, for services of officers	250 24	
Appropriation for Public Buildings, for labor	151 90	
Boston & Maine Railroad, for ground rent of hall	475 00	
A. P. Bateman, for lumber	3 85	
A. L. Brooks & Co., for sawdust	20	
Amasa Pratt & Co., for moulding	50	
Frederick Taylor Co., for cord and chain	7 85	
L. A. Derby & Co., for burners and bushings	2 10	
Eastern Electric Light and Storage Battery Co., for repairing electrical apparatus	28 20	
W. A. Mack & Co., for drinking-cups, labor, etc	2 19	
C. B. Coburn & Co., for tapers, dusters, brooms, mops, etc	17 34	
Amounts carried forward	$3,572 30	$27,747 16

Amounts brought forward	$3,572 30		$27,747 16
Paid for SUNDRIES AT HUNTINGTON HALL:			
To Daniel Gage, for ice	11 80		
Howard & Wilson, for coal	25 50		
Darius Whithed, for soap	21 00		
Benner & Corey, for use of chairs	1 00		
Lowell Steam Carpet Cleaning Works, for cleaning carpets	7 65		
Frank Meehan, for teaming	50		
			3,639 75
Paid on ACCOUNT OF MAPS AND CHARTS OF THE CITY:			
To Sundry persons, for labor, as per pay-rolls	$4,407 90		
George E. Evans, for boat hire, postage, etc	13 45		
George A. Nelson, for car-fare	2 65		
Lowell Institution for Savings, for rent of room	3 00		
H. B. Shattuck, for crayon	65		
Frederick Taylor Co., for rules, nails, etc	3 70		
Bacheller, Dumas & Co., for blank books and fasteners	6 70		
H. C. Church & Son, for pencils	4 40		
Taylor Bros., for stationery	3 00		
The Rice Kendall Co., for paper	5 00		
C. B. Coburn & Co., for paint	26		
Carleton & Hovey, for chamois skin,	65		
A. L. Kittredge, for paper, ink, and painting rods	14 77		
W. H. Spalding & Co., for paste, ink, etc	9 37		
Merrimack Rubber Co., for tubing	32		
A. G. Pollard & Co., for cotton cloth,	2 40		
Charles I. Taylor & Co., for draughting-boards	8 80		
			4,487 02
Amount carried forward			$35,873 93

Amount brought forward		$35,873 93
Paid for MEMORIAL DAY:		
To Posts 42, 120, and 185, per resolution,	$800 00	
		800 00
Paid for SUNDRIES:		
To Appropriation for Roads and Bridges, for sidewalk assessment	$ 28 47	
Appropriation for Roads and Bridges, for teaming and labor	13 88	
Appropriation for Public Buildings, for labor and material	553 98	
Appropriation for Paupers, for labor,	3 50	
Appropriation for Water Works, for water	814 30	
New England Telephone & Telegraph Co., for use of telephones,	206 64	
Western Union Telegraph Co., for telegrams	11 89	
A. L. Brooks & Co., for lumber	3 60	
Burnham, Forrest & Davis, for lumber	102 77	
Charles E. Adams, for hardware	3 41	
Bartlett & Dow, for hardware	16 50	
Richard Dobbins, for repairing wheelbarrow	3 00	
H. B. Shattuck, for paper	9 00	
Frederick Taylor Co., for shears, twine, copying press, etc	44 30	
O. E. Averill, for blacksmithing	4 00	
H. R. Barker Manufacturing Co., for glass, labor, burners, etc	7 65	
Alvin Lawrence, for repairing stamp,	25	
W. A. Mack & Co., for repairing stove	4 11	
H. H. Wilder & Co., for mugs, tin boxes, etc	57 00	
Samuel Young, for repairing electrical apparatus	2 00	
C. Zimmer, for fitting keys	1 75	
Adams & Co., for carpets, rugs, and labor	102 10	
Amounts carried forward	$1,994 10	$36,673 93

Amounts brought forward		$1,994	10	$36,673 93
Paid for SUNDRIES:				
To Abels & Son, for crape, ribbon, towels, etc		15	27	
S. Drewett, for shawl straps		5	40	
French & Puffer, for cuspidores and mats		8	25	
Alfred Gilman & Son, for repairing flags		8	88	
Lowell Steam Carpet Cleaning Works, for cleaning carpets		46	65	
Manning & Leighton, for furniture for armory		571	00	
Offutt & Whitaker, for furniture and use of stove		25	50	
J. F. Puffer & Son, for chairs		10	80	
Robertson & Co., for water coolers,		2	50	
Bonlger & McOsker, for blacking and brushes		9	65	
Carleton & Hovey, for sponge, red fire, benzine, and ammonia		7	86	
C. B. Coburn & Co., for brooms, mop-handles, waste, etc		21	52	
Ellingwood & Co., for brush and comb		1	42	
Daniel Gage, for ice		54	25	
P. M. Jefferson & Co., for soap		18	00	
A. L. Kittredge, for dusters and lettering boxes		23	31	
W. H. Spalding & Co., for wax, crayon, dusters, pencils, etc		43	25	
Swan & Smith, for blacking		6	70	
H. O. Stevenson, for soap		13	50	
Stiles & Co., for oil			75	
M. H. Walsh, for soap		4	05	
J. Arthur Gage, for cash paid for labor on report, and material		14	15	
Samuel Hanson, for samples of milk,		14	39	
Cyrus W. Irish, for analysis of milk,		70	00	
William Marren, for analysis of milk		20	00	
E. Sheppard & Sons, for flowers		4	25	
C. W. Cheney, for lunches for board of aldermen		33	55	
Amounts carried forward		$3,048	95	$36,673 93

Amounts brought forward	$3,048 95	$36,673 93
Paid for SUNDRIES:		
To Page & Nunn, for lunches for registrars of voters	18 00	
Frank E. Shaw, for lunches for committee on cities	53 67	
Bacheller, Dumas & Co., for blank books, binding and lettering	726 17	
Butterfield Binding and Printing Co., for envelopes and boxes	6 50	
Belknap & Co., for stamp	2 50	
H. C. Church & Son, for pens, ink, paper, and mucilage	68 49	
A. Y. Caswell, for railroad tickets	100 00	
F. P. Coggeshall, for blank books, paper, and envelopes	108 70	
C. F. Hatch & Co., for repairing ballot boxes	30 00	
Chase Bros., for envelopes	3 00	
J. L. Fairbanks & Co., for paper blocks	2 50	
J. M. Fellows, for stamp-pad and repairing stamp	4 62	
Lowell Rubber Co., for acorn tips, washers, and repairing hose	2 15	
Lowell Institution for Savings, for file boxes	9 40	
E. J. Leach, for pencils and repairing ballot boxes	15 00	
Charles Littlefield & Co., for envelopes	4 50	
Merrimack Rubber Co., for rubber bands	7 63	
J. Merrill & Son, for pens, paper, ink, pencils, maps, directories, etc.	222 39	
G. C. Prince & Son, for pencils, subscriptions, etc	23 35	
A. V. Partridge, for posting	10 50	
Quinlan & Washburn, for rubber bands	1 35	
Harry Raynes, for gavel	15 00	
F. E. Rollins, for typewriting	9 43	
Sampson, Murdock & Co., for directory	5 00	
Amounts carried forward	$4,498 80	$36,673 93

Amounts brought forward	$4,498 80	$36,673 93
Paid for SUNDRIES:		
To J. L. Severance, for stamps, ink, and pad	9 90	
Spencer & Co., for lettering boxes,	1 00	
Taylor Bros., for pens, ink, and stationery	28 90	
Banker and Tradesman, for subscription	5 00	
Byron Boyd, for reports	5 00	
Citizen Newspaper Co., for subscriptions	10 00	
Campbell & Hanscom, for printing and subscriptions	16 25	
Lowell Daily News, for subscriptions	11 00	
Morning Mail Co., for subscriptions and printing	13 75	
Marden & Rowell, for subscriptions,	12 00	
Vox Populi Press, for envelopes, blank books, letter heads, subscriptions, etc.	108 95	
George S. Cheney, for expenses of Board of Assessors, postage, etc.,	37 34	
David Chase, for rent of post-office box, postage, ink, etc.	16 75	
Girard P. Dadman, for postage, rubber stamps, etc	24 15	
Austin K. Chadwick, for postage, ink, blank books, traveling expenses, and cash balances	175 80	
George E. Evans, for traveling expenses	4 24	
Henry Hoole, for postage, rent of post-office box, traveling expenses, etc.	60 48	
Stephen J. Kirby, for ink, postage, etc.	18 47	
H. M. Potter, for traveling expenses, postage, etc.	35 85	
Van B. Sleeper, for traveling expenses, postage, etc.	87 60	
Abel Wheeler, for expenses of Board of Assessors to Worcester	4 00	
Amounts carried forward	$5,185 23	$36,673 93

Amounts brought forward	$5,185 23	$36,673 93
Paid for SUNDRIES:		
To Middlesex Registry of Deeds, for recording	75 05	
Edward Daignault, for services as interpreter	3 00	
Charles D. Larochelle, for services as interpreter	67 38	
Atis Osgood, for services for Board of Assessors	15 00	
Edward B. Peirce, for services for Board of Assessors	497 88	
John A. Lowell & Co., for 450 steel-plate engraved City Hall and Memorial Building Bonds, and City Seal	885 00	
C. H. Frost, for repairing clocks	1 00	
George A. Hedrick, for care of clock, High Street Church	50 00	
John J. Cosgrove, for playing chimes at St. Patrick's Church, July 4,	10 00	
George W. Raynes, for playing St. Anne's Church chimes, July 4,	10 00	
Boston & Maine Railroad, for rent of rooms for armory	270 00	
Cook, Taylor & Co., for rent of room for armory	275 04	
Estate F. A. Hildreth, for rent of rooms for armories	641 74	
Lowell Machine Shop, for rent of land for voting precinct	50 00	
Owners of Urban Block, for rent of room for armories	300 00	
E. K. Perley, for rent of box in deposit vault	50 00	
J. F. Puffer, Jr., for rent of rooms for voting precinct	50 00	
John A. Brown, for care of ward room	19 00	
T. H. Conley, for care of ward room,	12 00	
Patrick Donohoe, for care of ward room	12 00	
Thomas Hannafin, for care of ward room	16 00	
Amounts carried forward	$7,495 32	$36,673 93

Amounts brought forward	$7,495 32	$36,673 93
Paid for SUNDRIES:		
To A. A. Laughton, for care of ward room	21 00	
M. G. Leonard, for care of ward room	4 50	
J. F. Merrill, for care of ward room,	22 00	
David B. Meers, for care of ward room	1 00	
John H. Quinn, for care of ward room	2 00	
A. Quinnby, for care of ward room,	1 00	
Thomas Rogers, for care of ward room	34 00	
John F. Sparks, for care of ward room	11 50	
George Teel, for care of ward room,	15 00	
The following persons for reporting births:		
John F. Burrill	19 80	
B. F. Freeman	24 20	
Charles C. Hartwell	62 40	
E. W. Huntington	34 90	
M. H. McCue	25 90	
H. E. Richardson	26 30	
Solon Bartlett	12 25	
H. A. Chaput	3 00	
C. A. Daly	18 50	
J. D. Delisle	1 75	
James B. Field	1 75	
Warren S. Foss	1 50	
J. A. Gagnon	8 00	
A. A. Gelineau	21 00	
A. E. Gillard	2 00	
James W. Grady	1 00	
Guy Holbrook	2 25	
W. A. Johnson	3 50	
Mary Kindburg	1 00	
Catharine Loftus	3 75	
A. W. Lavigne	26 75	
William H. Lathrop	25 00	
William P. Lawler	10 50	
R. Mignault	45 75	
Amounts carried forward	$8,990 07	$36,673 93

Amounts brought forward	$8,990 07	$36,673 93
Paid for SUNDRIES:		
To the following persons for reporting births:		
T. E. McOwen	4 00	
A. Mignault	3 50	
A. Q. Phelan	1 50	
Charles H. Ricker	1 50	
James F. Sullivan	28 50	
Catharine Shanley	22 00	
L. E. Schiller	2 50	
A. Vincellette	75	
J. W. Brooks, for burial of James C. Tasey	35 00	
J. B. Currier, for burial of Henry F. Smith, James G. Cook, and Joel M. Thurston	92 00	
Peter Davey, for burial of Michael Sullivan	35 00	
James A. Keyes, for burial of James Fay, Peter Roark, Michael Farley, and Patrick J. Regan	140 00	
James F. O'Donnell, for burial of S. Murray	60 00	
James H. McDermott, for burial of George F. Hackett, Peter Dumas, and James Spellman	105 00	
Charles M. Young, for burial of David Mitten	33 50	
City of Haverhill, per resolution	25 00	
Andrews & Wheeler, for lettering, teaming, and setting up dial at Fort Hill Park	23 00	
J. W. Bennett & Co., for tarred paper	7 25	
Shufelt & McCoy, for cannon wheel,	15 00	
Stanton & Thurston, for sprinkling street	13 00	
George F. Atkins, for carriage hire,	8 00	
Chase & Hunton, for carriage hire	42 00	
Lowell Standard Cab & Hack Co., for carriage hire	7 25	
Morse & Sparks, for carriage hire	253 35	
G. W. Norris, for carriage hire	4 00	
Amounts carried forward	$9,952 67	$36,673 93

Amounts brought forward	$9,952 67	$36,673 93
Paid for SUNDRIES:		
To Timothy Kelly, for teaming	50	
T. G. Little, for teaming	4 00	
James Leach, for teaming	58 00	
Frank S. Ladd, for teaming	6 00	
Daniel McCarthy, for teaming	24 75	
Frank Meehan, for teaming	1 00	
D. W. Mosher, for teaming	6 00	
Alphonso Merrill, for teaming	25 50	
James Nixon, for teaming	3 00	
William Roberts, for teaming	46 00	
John Ragen, for teaming	1 50	
M. Ross, for teaming	8 00	
S. C. Smiley, for teaming	3 00	
F. A. Smiley, for teaming	3 00	
Redmond Welch, for teaming	10 00	
E. A. Wood, for teaming	9 00	
American Express Co., for transportation	13 95	
Lovejoy-Paul Express Co., for transportation	15	
		10,176 02
Total expenditure for the year 1890		$46,849 95

TRANSFERS.

To Appropriation for Schools	$ 14 64	
Appropriation for Police	5,005 98	
Appropriation for Salaries	3,900 00	
		8,920 62
Balance undrawn, Dec. 31, 1890		3,435 64
		$59,206 21

PAUPERS.

Appropriated and assessed in 1890.....	$55,000 00	
		$55,000 00

RECEIPTS.

Received into the treasury on account of PAUPERS:

From Appropriation for Schools, for wood and coal.....	$670 79	
Appropriation for Roads and Bridges, for wood.....	5 75	
Appropriation for Reserved Fund, for wood.....	55 59	
Appropriation for Police, for wood,	3 13	
Appropriation for Fire Department, for wood.....	44 00	
Appropriation for Sewers and Drains, for wood.....	4 50	
Appropriation for Public Buildings, for coffin.....	5 00	
Appropriation for Health, for wood.....	7 00	
Commonwealth, for support of State paupers (U. S. cases)..	159 51	
Commonwealth, for temporary support of State paupers (U. S. cases).....	25 50	
Commonwealth, for support of State paupers.....	910 05	
Amounts carried forward	$1,890 82	$55,000 00

Amounts brought forward.....	$1,890 82	$55,000 00
Received into the treasury on account of PAUPERS:		
From Commonwealth, for temporary support of State paupers....	787 10	
Commonwealth, for burial of State paupers.....	510 00	
County of Middlesex, for board of Kate Hamilton and Mary Kane and child, at work-house.....	26 29	
City of Boston, for aid rendered Bridget Noble and children, Elizabeth Shaw, Carrie Duxberry, Annie Handy, Julia Hyde, Mary J. Kennedy, Mrs. John Mansfield, Lizzie Barry, Lizzie Mirren, Carrie Jones, Patrick Dwyer and family, Patrick Mulvey, John Mansfield, Arthur Evans, Michael McCarty, John Miner, and Charles A. Spaulding.....	374 80	
City of Cambridge, for board of James Lacy at almshouse....	13 29	
City of Chelsea, for board and clothing of Stephen O'Hare and John McCarthy, at Reform School.....	133 66	
City of Fitchburg, for board and clothing of James Neil, Frank Reynolds, Charles Clifford, and Edward Rock, at Reform School.....	311 96	
City of Fall River, for aid rendered Daniel Henry, William Noonan, John F. Martin and family, Martin Kane, and James Driscoll.....	61 74	
City of Holyoke, for aid rendered Mary Sullivan and Ellen McFadden, and medical aid to Jennie Langdon.....	25 73	
Amounts carried forward.....	$4,135 39	$55,000 00

Amounts brought forward	$4,135 39	$55,000 00
Received into the treasury on account of PAUPERS:		
From City of Lawrence, for aid rendered Annie Donovan, Mary Jones, Mrs. E. J. Mallon, Rose McGearey and child, Mary Rogers and mother, Barbara McDonald, Caroline Toney, Mary Bemoay and child, Mary Shay, Mary Donovan, Agnes Holmes, Mary and Alice Coughlin, William Bagley, Louis Martel, John Rogers, and John McNamara	331 93	
City of Malden, for board and clothing of Alvord Chase, C. Mourningham, T. Mourningham, Michael Mahoney, and Arthur Gaudette, at Reform School	140 19	
City of Newton, for aid rendered Annie Knowles	18 50	
City of Newburyport, for aid rendered Martin H. Cogger, and burial of Fanny Trainor	13 00	
City of Somerville, for aid rendered Annie and Mary Lyons, Henry Sullivan, Hugh Walsh, and James H. Swift, and burial of Kate Lyons	275 55	
City of Springfield, for aid rendered Annie Denif, Augustus Waldron, and G. W. Sanderson	23 95	
City of Salem, for aid rendered James Crawford	39 00	
City of Worcester, for aid rendered Mrs. Frank Geldert	5 22	
City of Waltham, for aid rendered Mrs. Edward Vallely, Thomas Ashworth, William C. Reed, Mark Tiffany, and Walter Doe	271 68	
Amounts carried forward	$4,254 41	$55,000 00

Amounts brought forward	$4,254 41	$55,000 00
Received into the treasury on account of PAUPERS:		
From City of Woburn, for aid rendered Minnie McLaughlin, and board and clothing of John Duffy and Thomas Ready, at Reform School	64 40	
Town of Amesbury, for use of ambulance, and aid rendered Kate Langan and child	92 41	
Town of Attleboro', for aid rendered Maria Bither and family	6 30	
Town of Acton, for board of Lillian and Mary Kingsley	135 00	
Town of Andover, for aid rendered S. P. Moore	1 00	
Town of Athol, for aid rendered Terance Donnelly	1 73	
Town of Billerica, for aid rendered Betsey Schofield, Emma Riley, Ellen Hartley and children, Fred Mallison and family, and Albert Russell, and burial of Albert Russell	114 21	
Town of Chester, for aid rendered Victoria Richards and son	21 50	
Town of Chelmsford, for aid rendered Elizabeth Donohoe and children, Lizzie Nelson and family, F. E. Russell and family, Lizzie Nelson, Nora McAnanney and child, and Jere. Harrington	62 96	
Town of Clinton, for aid rendered Elizabeth Smith, Mrs. Jane O'Toole, and James Kane	74 59	
Town of Chicopee, for aid rendered Mrs. Charles Smith and Mrs. William White	42 92	
Town of Canton, for aid rendered Thomas H. Daniels	22 86	
Amounts carried forward	$5,894 29	$55,000 00

Amounts brought forward.....	$5,894 29	$55,000 00
Received into the treasury on account of PAUPERS:		
From Town of Cohasset, for aid rendered Esther Harris.....	8 57	
Town of Danvers, for aid rendered Mrs. William Henderson.....	64 00	
Town of Dracut, for aid rendered Elizabeth Rule and family...	24 75	
Town of East Bridgewater, for aid rendered Catharine Quinn,	9 00	
Town of Edgeworth, for board and clothing of Arthur Gaudette, at Reform School.....	27 58	
Town of Everett, for board and clothing of William McCafferty, at Reform School.....	136 29	
Town of Franklin, for aid rendered Bridget Sexton.....	1 21	
Town of Groton, for aid rendered John Fannon.....	60	
Town of Gardner, for aid rendered Mary Bishop.....	7 14	
Town of Hopedale, for board of Harland W. Greenwood, at Reform School.....	34 29	
Town of Lynnfield, for aid rendered George A. Abbott and family	6 50	
Town of Lincoln, for board and clothing of Charles Tyler, at Reform School.....	136 29	
Town of Marlborough, for board and clothing of Arthur Furlong and Albert Coburn, at Reform School.....	170 98	
Town of Merrimac, for aid rendered Margaret Noonan.....	60	
Town of Medford, for board and clothing of Thomas Littlewood and H. Stacey, at Reform School.....	272 58	
Amounts carried forward...	$6,794 67	$55,000 00

Amounts brought forward	$6,794 67	$55,000 00
Received into the treasury on account of PAUPERS:		
From Town of Melrose, for board of Ada G. Emmott at Reform School	32 13	
Town of Milford, for aid rendered William H. Seanach and John Walsh	1 67	
Town of Northfield, for aid rendered Fred W. Whitney and family	3 50	
Town of Natick, for aid rendered Ella Witherell.....	38 00	
Town of North Reading, for aid rendered Luther F. and Bertha Bradford.....	69 30	
Town of Pepperell, for board of Franklin J. Rogers	75	
Town of Randolph, for aid rendered Annie Bunberry and Patrick Doherty.....	117 00	
Town of Stoneham, for board of Robert Bray, at Reform School	170 58	
Town of Shelburne, for aid rendered Sarah McLaughlin and James McLaughlin.....	22 14	
Town of Shirley, for aid rendered Edward Perrin.....	1 50	
Town of Stoughton, for aid rendered Mrs. Joseph H. Clark,	50 85	
Town of Tyngsboro', for aid rendered Esther Holmes.....	21 78	
Town of Tewksbury, for aid rendered Mrs. A. McDonald....	25 00	
Town of Winchester, for board and clothing of Joseph Conley, and aid rendered Jeanette Stone.....	177 02	
Town of Westford, for aid rendered Margaret Casey and daughter, and Mrs. George T.		
Amounts carried forward.....	$7,525 89	$55,000 00

Amounts brought forward	$7,525 89	$55,000 00
Received into the treasury on account of PAUPERS:		
alias James T. Whitcomb, and board and clothing of Joseph Larkin, at Reform School	201 09	
From Town of Wakefield, for aid rendered Michael Welch, and board and clothing of Frank Ames, at Reform School	138 04	
Town of Wellesley, for aid rendered Martha Roy	73 29	
Sabina Cain, for overdraft	5 00	
Ann Kelly, for overdraft	8 00	
Martha Roy, for overdraft	5 00	
Albert Pindar, for sales from farm,	700 79	
Charles H. Richardson, for State aid of Morty Scully, and board of John Tobin, Joseph Neal, Rose A. Davis, and Peter Cassidy	276 67	
Mrs. Nathan Allen, for board of William C. Waters	6 00	
Wilder Bennett, for support of C. A. Bennett, at Insane Hospital	168 54	
F. A. Buttrick, for support of David Moore, at almshouse	97 50	
A. Y. Caswell, for support of Mary A. Caswell, at Worcester Lunatic Hospital	169 46	
Mrs. Peter Cassidy, for support of Peter Cassidy, at Worcester Lunatic Hospital	42 71	
James Cowell, for board of William Cowell, at almshouse	16 43	
Mrs. George W. Cummings, for support of Annie A. Harding, at Westboro' Insane Hospital,	47 82	
John Clark, trustee, for board of Martha Tinham, at almshouse,	24 43	
Flora E. Dunlap, for support of Lusylvia T. Bartlett, at Worcester Lunatic Hospital	169 46	
Amounts carried forward	$9,676 12	$55,000 00

Amounts brought forward	$9,676 12	$55,000 00
Received into the treasury on account of PAUPERS:		
From Thomas F. Enright, for board at almshouse	3 14	
Estate of Elbridge Livingston, for support of Albert Livingston, at Insane Hospital	169 46	
Estate of Mrs. Joseph P. Neal, for board of Joseph P. Neal, at almshouse	130 36	
Estate of Mary Kibble, for board at almshouse	98 33	
E. J. Fenderson, for support of Mary Fenderson, at Worcester Lunatic Hospital	41 79	
C. F. Going, for board of Alfred G. Jones, at almshouse	19 85	
Thomas Gray, for board of Ellen Gray, at almshouse	23 21	
David Moore, for board at almshouse	12 50	
George F. Offutt, for support of Fanny A. Sargent, at Danvers Lunatic Hospital	169 46	
F. H. Penniman, for board of Hannah Penniman, at almshouse	130 36	
John Pearson, for support of Sarah Pearson, at Danvers Lunatic Hospital	85 42	
E. B. Quinn, for board of Mary Collins, at almshouse	85 42	
John Tobin, for board of John Tobin, Jr., at almshouse	40 00	
Margaret Ward, for board of Patrick Ward, at almshouse	24 00	
		10,709 42
		$65,709 42
Transferred from Appropriation for Fire Department		504 96
		$66,214 38

EXPENDITURES.

Paid SECRETARY OF THE BOARD OF OVERSEERS OF THE POOR:		
To Charles H. Richardson, salary.....	$1,300 00	
		$1,300 00
Paid for SERVICES AT ALMS-HOUSE:		
To Albert Pindar, Superintendent, salary.....	$1,994 72	
William A. Lang, Chaplain and Teacher in Reform School, salary.....	1,196 52	
Michael Sexton, Teacher in Reform School, salary.....	478 40	
Sundry persons, for labor, as per pay-rolls	5,235 35	
		8,904 99
Paid for FUEL AT ALMSHOUSE:		
To William E. Livingston, for coal....	$2,692 92	
		2,692 92
Paid for GRAIN, GROCERIES, PROVISIONS, ETC.:		
To C. H. Hanson, for oats.....	$131 98	
William E. Livingston, for oats, meal, flour, and middlings....	927 34	
William H. Maule, for seeds.....	23 00	
Joseph Miller, for corn, meal, and buckwheat	515 60	
E. J. Noyes, for hay.....	15 00	
Edward N. Wood & Co., for corn, meal, oatmeal, and buckwheat,	471 10	
Amounts carried forward	$2,084 02	$12,897 91

Amounts brought forward	$2,084 02	$12,897 91

Paid for GRAIN, GROCERIES, PROVISIONS, ETC.:

To William J. Burbeck, for milk	677 70	
Buttrick & Co., for groceries	272 25	
G. J. & D. Bradt, for crackers	232 50	
Chase & Sanborn, for coffee	560 36	
C. G. Coburn, for cheese, apples, guano, etc.	160 02	
Donovan & Co., for flour	1,219 50	
Fleischman & Co., for yeast	112 96	
Henry Hatch, for butter, cheese, and flour	623 16	
Hartwell & Co., for flour, tobacco, fruit, and groceries	479 63	
M. J. Hale, for fruit	12 60	
Kilpartrick Bros., for fruit	51 65	
P. Keyes, Jr., for groceries	96 82	
John H. Nichols, for apples	6 00	
William Nichols & Co., for flour, groceries, etc.	1,975 80	
Nichols & Co., for tea and coffee	453 74	
E. J. O'Neil, for groceries	956 56	
H. B. Newhall & Son, for coffee	16 50	
Simpson & Rowland, for rice and coffee	232 58	
Caleb L. Smith, for groceries	27 05	
Chase & Co., for beef	615 99	
S. K. Chase, for beef, poultry, etc.,	67 50	
M. Corbett, for beef, poultry, etc.	823 86	
Charles W. Wilder, for curing hams,	16 00	
G. M. Foster, for apples, cheese, potatoes, etc.	1,828 26	
John M. Farrell, for beef, poultry, etc.	1,244 51	
Jewett & Swift, for beef	1,078 26	
F. A. Tuttle, for fish and groceries,	237 62	
J. Belyea & Co., for fish	660 68	
Caswell, Livermore & Co., for fish	5 50	
Potter & Wrightington, for fish	45 00	
M. Raulett, for fish	97 61	
Israel L. Putnam, for making cider,	9 84	
		16,982 06
Amount carried forward		$29,879 97

Amount brought forward.....		$29,879 97
Paid for CLOTHING, DRY GOODS, ETC.:		
To Willard A. Brown, for leather and blacking	$ 51 00	
Cook, Taylor & Co., for dry goods,	681 58	
A. B. Chapman, for stockings, combs, brushes, etc.....	75 96	
Putnam & Son, for clothing.....	241 61	
A. G. Pollard & Co., for dry goods,	544 20	
Shaw Stocking Co., for hosiery....	58 45	
J. Clark Glidden, for shoes.....	279 75	
A. M. Huntoon, for boots and shoes,	181 81	
C. A. Mitchell & Co., for boots and shoes	110 10	
		2,224 46
Paid for DRUGS, MEDICINES, ETC.:		
To Carleton & Hovey, for medicine....	$118 09	
Ellingwood & Co., for elatol and liniment.....	54 00	
		172 09
Paid for SUNDRIES AT ALMS-HOUSE:		
To Appropriation for Water Works, for water.....	$942 00	
Lowell Gas Light Co., for gas.....	664 07	
New England Telegraph & Telephone Co., for use of telephone,	37 20	
A. B. Adams, for chestnut posts....	56 00	
Burnham, Forrest & Davis, for lumber.....	708 05	
A. L. Brooks & Co., for lumber....	2 99	
Charles E. Adams, for hardware...	85 22	
Bartlett & Dow, for hardware.....	372 41	
Amounts carried forward.....	$2,867 94	$32,276 52

Amounts brought forward.....	$2,867	94	$32,276 52
Paid for SUNDRIES AT ALMS-HOUSE:			
To Boutwell Bros., for iron, steel, etc..	44	96	
Daniel Lovejoy, for castings.....	72	57	
Frederick Taylor Co., for hardware,	3	60	
D. Blackington, for blacksmithing..	13	55	
T. Costello & Co., for pipe, fittings, pots, tin, labor, etc.....	89	83	
Josiah Gates & Son, for leather lacing		90	
Charles T. Haskell, for filing saw...		15	
S. H. Jones, for pipe, fittings, labor, etc.....	14	84	
Joel Knapp & Son, for castings....	8	93	
W. A. Mack & Co., for copper and labor		73	
O. A. Richardson, for keys.....	5	30	
Rice & Company, for wire, screening, guards, braces, etc.....	144	47	
Scannell & Wholey, for castings...	39	48	
J. W. Stewart & Co., for pipe, fittings, ventilators, labor, etc....	703	56	
H. H. Wilder & Co., for percolators,	2	75	
G. F. Allen, for repairing harnesses, etc	50	60	
Moses Charon, for harness.....	35	00	
H. F. Ebert, for whip, repairing harnesses, etc.....	3	40	
Fay Bros. & Hosford, for repairing carriages, etc.....	5	25	
Fay Bros., for repairing carriages..	51	75	
C. H. Hanson, Jr., for harnesses....	120	00	
C. H. Hanson, for blankets, medicine, horse, and difference in horses exchanged.....	410	50	
M. V. B. Libbey, for shoeing horses,	126	30	
Shufelt & McCoy, for repairing carriages	85	88	
C. B. Coburn & Co., for oil, paint, varnish, glass, putty, etc.....	354	20	
A. C. Daniels, for medicine for horses	7	00	
Amounts carried forward.....	$5,263	44	$32,276 52

Amounts brought forward		$5,263 44	$32,276 52
Paid for SUNDRIES AT ALMS-HOUSE:			
To W. A. Dickinson, for soap		42 00	
Daniel Gage, for ice		103 75	
P. M. Jefferson & Co., for soap		15 54	
C. B. Merrill, for harness dressing,		1 50	
James Palm, for soap chips		132 20	
The Safety Egg Carrier Co., for egg carrier		1 75	
Talbot Dyewood & Chemical Co., for ammonia, chloride lime, etc.,		181 01	
Mitchell Wing, for extractor		1 00	
Austin & Fellows, for brushes		39 00	
C. E. Austin, for piano stool and cover		7 50	
John Cross, for awnings		25 00	
A. L. Kittredge, for paint, oil, cord, and labor		30 58	
Lowell Rubber Co., for blankets, sheeting, etc.		30 85	
Lamson & Pindar, for crockery, tinware, pails, etc.		483 43	
Henry F. Miller & Sons Piano Co., for piano		325 00	
New England Bunting Co., for flag,		13 00	
J. F. Puffer & Son, for chairs, tables, and bags		329 33	
Stone & Whitney, for base balls and bats		4 00	
Singer Manufacturing Co., for exchange of sewing machines		40 00	
Robert G. Bartlett, for services as appraiser		15 00	
J. D. Hartwell, for services as appraiser		15 00	
J. S. Lapierre, for services as appraiser		20 00	
Albert Pindar, for rent of post-office box, traveling expenses, etc.		226 03	
A. Y. Caswell, for mileage book		20 00	
Lowell Daily Courier, for subscription		6 00	
Amounts carried forward		$7,371 91	$32,276 52

Amounts brought forward	$7,371 91	$32,276 52
Paid for SUNDRIES AT ALMS-HOUSE:		
To J. Merrill & Son, for stationery, ink, etc	15 47	
G. C. Prince & Son, for blank books, stationery, etc	16 68	
Ring's Ambrosia Co., for paper, pens, and pencils	7 20	
P. Ring, for stationery	24 31	
F. E. Rollins, for typewriting	5 00	
A. A. Evans, for veterinary dentistry	10 50	
J. H. Sparks, for professional services	13 00	
Robert Wood, for professional services	9 00	
T. D. Bailey, for mason work and material	26 45	
A. E. Burnham, for labor	591 84	
Robert Goulding, for slate, zinc, and labor	38 31	
William E. Livingston, for cement, lime, and brick	69 52	
D. M. Prescott, for mason work and material	6 25	
J. E. Conant & Co., for cow	58 00	
Fred W. Merrill, for labor	23 00	
L. J. Mansfield, for swine	8 00	
Town of Chelmsford, for taxes of 1890	36 55	
C. E. Bohonan, for carriage hire	1 50	
American Express Co., for transportation	30	
Boston & Lowell Express Co., for transportation	1 80	
Lovejoy-Paul Express Co., for transportation	9 75	
Boston & Maine Railroad, for transportation	15 33	
Boston & Maine Railroad, Lowell System, for transportation	1 05	
		8,360 72
Amount carried forward		$40,637 24

Amount brought forward		$40,637 24
Paid on ACCOUNT OF DISPENSARY:		
To William T. Loftus, for services as clerk	$525 43	
Ernest L. Couillard, for services as clerk	237 86	
Lowell Laundry, for washing towels	2 36	
Clinton L. Bruce, for plasters	51 06	
P. Cummiskey Co., for wine and whiskey	246 37	
P. Dempsey & Co., for alcohol	118 54	
Ellingwood & Co., for medicines	61 56	
Fox, Fultz & Websters, for prescriptions	32 88	
John I. Gibson & Co., for medicine	353 65	
Frank C. Goodale, for medicine	6 00	
H. O. Stevenson, for medicines, bandages, etc.	254 65	
Patrick Teague, for wine and whiskey	21 25	
Upjohn Pill and Granule Co., for pills	92 02	
Buttrick & Co., for sugar	3 75	
C. B. Coburn & Co., for linseed oil, etc.	8 05	
Hartwell & Co., for sugar	14 00	
Talbot Dyewood Co., for muriatic acid and ammonia	2 72	
Edward N. Wood & Co., for flaxseed meal	4 20	
William H. Bradford, for prescription book	4 25	
Lowell Rubber Co., for tubing	63	
J. Merrill & Son, for dispensatory,	8 00	
Taylor Bros., for ink	1 20	
Vox Populi Press, for paper and labor	1 50	
A. G. Pollard & Co., for cotton and towels	14 45	
Bartlett & Dow, for scissors	85	
Amounts carried forward	$2,067 23	$40,637 24

Amounts brought forward	$2,067 23	$40,637 24
Paid on ACCOUNT OF DISPENSARY:		
To Timothy Kelley, for teaming	75	
American Express Co., for transportation	15	
G. E. Stanley, for transportation	84	
Hugh Armstrong, for services as ambulance driver	20 00	
William Fifield, for services as ambulance driver	702 00	
E. M. Grant, for services as ambulance driver	6 00	
Appropriation for Roads and Bridges, for labor on ambulance	11 00	
New England Telephone & Telegraph Co., for use of telephone	60 87	
Charles H. Ricker, for services as ambulance physician	51 19	
Adams & Co., for covers and mattresses	7 00	
V. A. Fifield, for washing	8 00	
A. W. Mead, for mat	4 50	
M. J. Burns, for gong on ambulance, and labor	1 00	
H. J. Draper, for painting ambulance	8 50	
G. F. Hill, for repairing ambulance	35 50	
D. R. Boynton, for wick, waste, and oil	3 22	
Bush & Garner, for pail, broom, oil, soap, etc.	1 45	
Nichols & Garner, for oil, broom, soap, etc.	3 36	
Mark Holmes, Jr., & Son, for lumber and labor	1 00	
Offutt & Whitaker, for chairs, broom, stove, and curtain	21 35	
H. H. Wilder & Co., for stove, pipe, and labor	20 25	
		3,035 16
Amount carried forward		$43,672 40

Amount brought forward		$43,672 40
Paid for SERVICES OF PHYSICIANS OUT OF ALMS-HOUSE:		
To W. G. Eaton	$125 98	
A. E. Gillard	139 96	
W. A. Johnson	159 00	
T. E. McOwen	143 00	
Charles H. Ricker	250 03	
James B. Field	21 00	
		838 97
Paid for COFFINS, INTERMENTS, ETC.:		
To Appropriation for Public Buildings, for coffins	$434 00	
Felix Albert, for interments	33 00	
J. W. Brooks, for interments	48 00	
J. S. Bourdon & Co., for interments,	73 00	
J. B. Currier, for interments	32 00	
Peter Davey, for interments	75 00	
James A. Keyes, for interments	45 00	
James F. O'Donnell, for interments,	97 00	
		837 00
Paid for LABOR, FUEL, ETC., AT WOOD YARD:		
To Sundry persons, for labor, as per payrolls	$2,327 50	
Appropriation for Roads and Bridges, for teaming coal, and labor	81 84	
Appropriation for Sewers and Drains, for sewer assessment on Broadway	22 00	
Appropriation for Public Buildings, for blanket box	1 25	
Appropriation for Water Works, for water	20 00	
William E. Livingston, for coal	780 71	
Amounts carried forward	$3,233 30	$45,348 37

Amounts brought forward		$3,233 30	$45,348 37
Paid for LABOR, FUEL, ETC., AT WOOD YARD:			
To Charles Clapp, for hay		122 90	
George F. Dyar, for carrots		4 25	
C. H. Hanson, for sponge, condition powders, oats, etc		102 00	
T. J. McDonald, for straw, oats, and corn		65 96	
O. D. Wilder, for grain		175 33	
J. C. Bennett, for broom, saw, hose, etc		13 66	
C. B. Coburn & Co., for hose-nozzle,		60	
Charles T. Haskell, for filing saws		55	
Nason B Parsons, for filing saws		60	
Staples Bros., for pipe, grate, etc		6 90	
C. C. Thompson, for shoeing horses,		3 10	
C. B. Merrill, for harness dressing		1 50	
O. K. Dexter, for repairing wagons, etc		111 87	
H. J. Draper, for painting wagon		14 00	
A. W. Mead, for currycomb and snap		1 20	
J. Merrill & Son, for stationery		3 00	
E. A. & A. T. Smith, for concrete		24 90	
Jesse A. Viles, for professional services		7 00	
			3,892 62
Paid for SUPPORT OF SUNDRY PERSONS OUT OF ALMSHOUSE:			
To Commonwealth, for support of Sundry persons, as follows: In Danvers Lunatic Hospital, Mary Seiferth and Edwin Price. In State almshouse, James Gillogly, James Hickey, Frank Hardy, and Michael Quinlan. In Worcester Lunatic Hospital, Octavia M. Caza, Bridget Doo-			
Amount carried forward			$49,240 99

Amount brought forward		$49,240 99
Paid for SUPPORT OF SUNDRY PERSONS OUT OF ALMS-HOUSE:		
lathy, Elizabeth Erskine, Jerrimy B. Folsom, Elizabeth McEvoy, Catharine McCabe, Margaret Nelson, Elizabeth Niles, Mary A. Paine, William L. Brown, Frank Gowall, George F. Kivlin, Mensell Mitchell, Terance McGovern, Francis Quinn, John Tobin, Joseph Varnum, and Frank E. Worthley. In Westboro' Insane Hospital, Anna A. Harding, William I. Sherman, and Henry F. Smith,	$ 868 33	
To John M. Fisk, for support of persons in Middlesex County House of Correction	164 43	
Danvers Lunatic Hospital, for support of Jessie M. Andrews, Edith P. Bissell, Jane Beckwith, Mary Collins, Louisa Chickland, Helen Coleman, Sarah Pearson, Fanny A. Sargent, Hannah Shea, Mary Seifurth, Ora A. Brown, David C. Courser, James J. Dunfey, Henry M. Flanders, Michael O'Mealey, Henry T. Parker, Edwin Price, Charles A. Ross, George T. Woodward	2,709 74	
Home for Young Women and Children, for board of Lillian and Mary Kingsley	171 00	
Lowell Hospital Association, for board of Lizzie Harvey, Mary Harris, Thomas Daniels, Albert Russell, Edwin C. Wells, and Patrick Ward	100 22	
Massachusetts School for Feeble Minded, for board of Rosa Kennedy	60 33	
Amounts carried forward	$4,074 05	$49,240 99

Amounts brought forward.....	$4,074 05	$49,240 99
Paid for SUPPORT OF SUNDRY PERSONS OUT OF ALMS-HOUSE:		
To Perkins Institution, and Massachusetts School for the Blind, for care of Edward Riley.....	60 85	
St. Peter's Orphan Asylum, for board of Mabel Hoyt, Mary Cody, Etta Murphy, Lizzie Roarke, Annie Smith, and Lena Smith,	215 25	
St. John's Hospital, for board of Elizabeth A. Monty, Mary E. Reilly, Nellie Green, Mary Duffy, Ellen Kelly, Alice Holdhouse, Veronica Lippe, Ellen Graham, Delia McDonald, Alice Bellany, Jennie Landon, Catharine Ryan, Elizabeth Frazer, Christine McLean, Mary A. Hedges, Josephine Demeris, Elizabeth Regan, Cecile Maurohall, Catharine Brady, Sarah McLaughlin, Annie Tonneré, Ann Campbell, Hannah Haggerty, Mary Scully, Mary O'Brien, Bridget Ryan, Elizabeth McDonald, Susan McLaughlin, Rose Green, Mary Collins, Annie O'Brien, Sarah Gordon, Catharine Lyons, Mary Cawley, Mary Hannibon, Elsie Goodwin, Mary Cox, Elizabeth McFarlin, Mary Bishop, Betsey Schofield, Mary Jones, Agnes Holmes, Elizabeth Smith, Bridget Murphy, Mary Lydon, Margaret Shea, Maria Majouski, Ann Langley, Jane Pecnod, Catharine Harding, Ann Gaffney, Margaret McGovern, Ellen Brady, Mary Kennedy, Selanova Massa, Mary Maguire, Fannie Flagg, Mary Bennett, Catharine Daly,		
Amounts carried forward	$4,350 15	$49,240 99

Amounts brought forward.....	$4,350 15	$49,240 99

Paid for SUPPORT OF SUNDRY PERSONS OUT OF ALMS-HOUSE:

Bridget McQuellen, Catharine Bean, Fannie Irvane, Ellen Cohen, Elizabeth Robbins, Catharine O'Neil, Mary Murphy, Bridget Sweeney, Mary Flannigan, Margaret McFadden, Bridget Loddy, Catharine McGettigan, Rose Duffin, Ellen Conner, Catharine McNamara, Nora McGrath, Delia Niland, Mary Fitzgerald, Annie Curtin, Annie Kennedy, Mabel Chick, Bridget Owen, Mary Laughlin, Jane Brady, Sarah McCarty, Edward Savard, James Mooney, Thomas Mahon, John McSorley, Ross Rue, Walter Rue, Alfred Heine, John Savage, John Fitzmaurice, Joseph Abelle, Thomas Marshall, Orzile Martel, Simeon Bellay, Michael Cregan, James Lynn, Patrick Noon, Thomas Cullen, Peter O'Heir, John Davis, Patrick Donovan, James Campbell, Peter Delins, Dominick Connolly, John Hoolan, Edward Byron, Thomas Hooban, John O'Rourke, George Aubin, Thomas Lynn, Peter Heslin, Roberge Elmy, James Foster, James Heslin, Charles Cameron, Amon C. Abbott, John Kenney, John Culral, Thomas Graham, Charles Lacy, Joseph Jolly, Slavel Umbert, John Beaty, Thomas Cryan, Patrick Donnelly, John McGee, Charles Lewis, Thomas Nerny, Andrew Maguire, John White, Charles Stott, August

Amounts carried forward	$4,350 15	$49,240 99

Amounts brought forward.	$4,350 15	$49,240 99
Paid for SUPPORT OF SUNDRY PERSONS OUT OF ALMS-HOUSE:		
Lachance, John Nicholson, Michael Coogan, George Garnet, John Cogan, John Moran, Martin Connelly, Edmond Abbott, Richard Power, John White, Donald McDonald, John Gaffney, Thomas Higgins, Robert Martin, Peter Hasty, John Meehan, Francis O'Neil, John Curry, and Wesley Dickens.....	2,619 82	
To Taunton Lunatic Hospital, for support of Frank Allen.....	169 46	
Westborough Lunatic Hospital, for board of Anna A. Harding, Joseph Linnehan, William I. Sherman, Joseph Hill, and Henry F. Smith	334 76	
Worcester Lunatic Hospital, for support of Mary A. Caswell, Lusylvia T. Bartlett, Ellen Fuzzard, Albertine Gellinas, Esther Flynn, Mary Briscoe, Bridget Mitchell, Jane B. Henry, Mary F. Bailey, Kate Harrington, Susan McDonough, Mary J. Fenderson, Margaret Nelson, Elizabeth Niles, Mary Ann Paine, Augusta J. Nickles, Margaret Gallagher, Catharine McCabe, Octavia M. Caza, Elizabeth Erskine, Bridget Kelly, Edward J. Fallon, James Wilde, James W. Burnham, Charles W. Goss, William L. Brown, Peter Cassidy, Mensell Mitchell, Francis Quinn, Jeremiah B. Folsom....	2,841 85	
		$10,316 04
Amount carried forward		$59,557 03

Amount brought forward		$59,557 03
Paid CITIES AND TOWNS, FOR AID RENDERED SUNDRY PERSONS:		
To City of Boston, for aid rendered Mary A. McNamara and sister, Charlotte A. Bolton, Ann S. Roberts, Ida Witherell, Mrs. James O'Sullivan, Mrs. Michael T. McNamara, Kate McCaffery, Joanna Murphy, Patrick Gaffney, Philip Vining, Andrew Harrington, Eben F. Clark, William L. Florence, Harry Blake, Edward Sayers, Michael Glynn, Frank Duke, Michael T. McNamara, John T. Meldon, and Abraham Reynor, and burial of Mary A. Grant and Kate McKeever	$279 51	
City of Cambridge, for aid rendered Mrs. Farley and Terrence W. Kelly and family	19 41	
City of Chelsea, for aid rendered Napoleon Lanctot and Walter I. Brooks	10 00	
City of Fitchburg, for aid rendered Mrs. Michael Raher and family, Mrs. James Robinson, and Walter E. Burnham	62 38	
City of Fall River, for burial of Thomas O'Brien, and aid rendered Charles W. Maher	30 03	
City of Holyoke, for aid rendered Jane Langstalf (or Lang) and granddaughter	20 00	
City of Haverhill, for board of Clark child	4 00	
City of Lynn, for aid rendered Michael Butler and family, and James J. Murphy	14 70	
City of Lawrence, for aid rendered Ann Coleman, Mrs. John Murray, Margaret Furneran, Ann		
Amounts carried forward	$440 03	$59,557 03

Amounts brought forward	$440 03	$59,557 03
Paid CITIES AND TOWNS, FOR AID RENDERED SUNDRY PERSONS:		
Miller, Mrs. George D. Hayes, George O. Goodwin, George D. Hayes, Dennis Regan, John McDonald, and Patrick Manning and family, and burial of Annie Regan	138 70	
To City of Newton, for aid rendered Mrs. Gertrude Green	43 60	
City of Newburyport, for aid rendered Mrs. John J. Morrison	24 75	
City of Salem, for aid rendered Mrs. J. King	6 00	
City of Somerville, for aid rendered Michael Sheridan and James H. Roach	33 85	
City of Worcester, for aid rendered Bridget Durkin, Mrs. James Ready, and Edward Bowker	60 15	
Town of Boxborough, for aid rendered Horace Mansur	7 43	
Town of Chelmsford, for aid rendered Augusta J. Nickles	33 10	
Town of Groton, for aid rendered and burial of Margaret Chase	53 85	
Town of Hudson, for aid rendered Mrs. J. T. Bushy and family, and burial of Nellie Bushy	117 75	
Town of Ipswich, for aid rendered Oliver H. Boynton	1 41	
Town of Methuen, for aid rendered Mary Eaton, Levi D. Stewart and family, and family of Charles Grimard, and burial of Catharine Stewart and Mary Eaton	88 58	
Town of Millbury, for aid rendered John Howard, alias John Little, and family	66 80	
Town of North Andover, for aid rendered Mary Adams	39 47	
Amounts carried forward	$1,155 47	$59,557 03

Amounts brought forward		$1,155 47	$59,557 03
Paid CITIES AND TOWNS, FOR AID RENDERED SUNDRY PERSONS:			
To Town of Tyngsborough, for aid rendered Charles T. Lippincott		24 14	
Town of Townsend, for aid rendered Martha J. Bridges and Arthur C. George		152 28	
Town of Westford, for aid rendered Peter J. Ahearn		7 50	
			1,339 39
Paid for AID RENDERED SUNDRY PERSONS OUT OF ALMSHOUSE:			
To Margaret Bradford, for cash	$ 96 00		
James J. Brown, for board of Brown children	30 00		
Mrs. Stephen Biggers, for board of Jane Wright	3 64		
Thomas P. Casey, for cash	82 00		
Margaret Clark, for cash	87 41		
Margaret Dunnigan, for cash	36 00		
Mrs. S. M. Dickey, for cash	102 00		
Eliza A. Desmazes, for board of Arthur Spofford	44 00		
James Devine, for cash	72 00		
Patrick Doherty, for cash	72 00		
Lucretia Freeman, for cash	72 00		
Eva Forbush, for board of Isabella Christian	21 16		
Alma Greggs, for board of Jones children	120 00		
William Goodale and wife, for cash,	42 00		
Mrs. William Henderson, for cash	72 00		
Lucindia L. Harris, for cash	11 00		
Ann Kelly, for board of Brown children	56 00		
Jane McQuade, for cash	72 00		
Mrs. Francis Murphy, for cash	7 42		
Amounts carried forward		$1,098 63	$60,896 42

Amounts brought forward	$1,098	63	$60,891 42
Paid for AID RENDERED SUNDRY PERSONS OUT OF ALMSHOUSE:			
To Mrs. Elijah Mixer, for cash	43	72	
Mary Olwell, for board of William Tucker	30	00	
Mary E. Perry, for board of Jane Wright	23	14	
Mrs. F. A. Roberts, for cash	144	00	
Catharine Roach, for cash	30	00	
Agnes Smith, for cash	92	00	
Elizabeth Shaw, for cash	89	00	
F. E. Saunders, for cash allowed for C. L. Baron	18	00	
Mrs. Ira Stickney, for cash	46	00	
Mary Tenary, for cash	13	07	
Mary J. Upton, for board of Annie and Ada Moran	68	15	
Joanna Welch, for board of John and Willie Gannon	72	00	
Mrs. Frank Wood, for cash	300	00	
Ella Witherell, for cash	50	00	
Sarah E. Woodbury, for board of Mary Pulasky	5	15	
			2,122 86
Paid for PROVISIONS, FUEL, ETC., ON ORDERS:			
To Charles W. Brigham, for groceries	$ 18	00	
Billings & Co., for groceries	3	00	
Fred M. Barney & Co., for groceries,	12	00	
Buttrick & Co., for groceries	33	00	
John H. Burke & Co., for groceries,	5	25	
S. W. Churchill, for groceries	57	00	
William F. Cleary, for groceries	9	00	
Michael Corbett, for groceries and provisions	32	00	
D. J. Donovan, for groceries and provisions	30	00	
Donovan & Co., for groceries	6	00	
P. Duggan & Son, for groceries	3	00	
Amounts carried forward	$208	25	$63,019 28

Amounts brought forward	$208 25	$63,019 28
Paid for PROVISIONS, FUEL, ETC., ON ORDERS:		
To J. J. Donovan, for groceries and provisions	9 00	
A. W. Derbyshire & Co., for groceries	3 00	
Thomas Egan, for groceries	6 00	
Greenwood Bros., for groceries	3 00	
B. F. Hale, for groceries	6 00	
Hartwell & Co., for groceries	68 00	
P. Keyes, Jr., for groceries	14 00	
F. D. Munn & Son, for groceries	5 00	
Martin Murphy, for groceries	3 00	
Ed. Martin, for groceries	2 00	
William Nichols & Co., for groceries	60 00	
P. F. Queenan, for groceries	3 00	
J. B. Richardson & Sons, for groceries	25 00	
O. B. Randlett, for groceries	96 00	
Caleb L. Smith, for groceries	61 00	
Stiles & Co., for groceries	45 00	
C. E. Smart & Co., for groceries	3 00	
Thomas Shirley, for groceries	16 00	
J. C. Tolman, for groceries	9 00	
C. A. Mitchell & Co., for shoes	35 82	
D. Swan, for boots	1 05	
Lowell Gas Light Co., for coke	48 00	
A. C. Wheelock, for rent	54 00	
		784 12
Paid for SUNDRIES OUT OF ALMSHOUSE:		
To James F. Walsh, for services as clerk in Secretary's office	$997 36	
Nellie A. Keyes, for services as clerk in Secretary's office	468 00	
Joseph Smith, for services as clerk in Secretary's office	129 00	
New England Telephone & Telegraph Co., for use of telephone,	55 92	
Amounts carried forward	$1,650 28	$63,803 40

Amounts brought forward	$1,650 28	$63,803 40
Paid for SUNDRIES OUT OF ALMSHOUSE:		
To Charles H. Richardson, for traveling expenses and postage.....	72 65	
Boston & Maine Railroad, for mileage ticket, etc	34 45	
A. Y. Caswell, for railroad tickets..	189 73	
George O. White, for railroad tickets	60 15	
Bacheller, Dumas & Co., for binding directories	1 60	
H. C. Church & Son, for stationery,	6 18	
F. P. Coggeshall, for blotting paper,	1 00	
Citizen Newspaper Co., for stationery	1 50	
Thomas Groom & Co., for letter file,	8 67	
A. L. Kittredge, for cord and pulley,	75	
Adams & Co., for repairing furniture.....	50	
Sherman & Manning, for mirror....	2 50	
Boutwell Bros., for repairing carriages.....	62	
Moses Charon, for whip and repairing harness.....	38 85	
Fay Bros. & Hosford, for repairing carriage.....	24 35	
A. W. Mead, for fly net and whip,	6 00	
Sawyer Carriage Co., for Goddard buggy	300 00	
Morse & Sparks, for carriage hire..	4 70	
Stanton & Thurston, for watering street.....	6 50	
		2,410 98
Total expenditure for the year 1890....		$66,214 38

POLICE.

Appropriated and assessed in 1890.....	$75,000 00	
		$75,000 00

RECEIPTS.

Received into the treasury on account of POLICE:		
From Appropriation for Reserved Fund, for services of officers.....	$ 1,308 99	
Appropriation for improvement of Andover Street Sewer System, for services of officers..	283 25	
Appropriation for Health, for services of officers.....	104 50	
Jacob G. Favor, for badges, cloth, services of officers, etc.....	2,495 18	
E. J. Noyes, for badges, cloth, old wagon, services of officers, etc	289 74	
James F. Savage, for fines, fees of officers, etc.....	11,484 39	
Lowell Institution for Savings, on loan.....	3,750 00	
		19,716 05
		$94,716 05
Amount carried forward		$94,716 05

Amount brought forward		$94,716 05

TRANSFERS.

From Appropriation for Reserved Fund,	$5,005 98	
Appropriation for Health	117 29	
		5,123 27
		$99,839 32

EXPENDITURES.

Paid CHIEF OF POLICE AND POLICE JUSTICE:

To Edward J. Noyes, Chief of Police, salary	$ 176 99	
Jacob G. Favor, Chief of Police,	1,623 01	
Samuel P. Hadley, Police Justice, salary,	100 00	
		1,900 00

Paid DEPUTY CHIEFS OF POLICE:

To Jacob G. Favor, Deputy Chief of Police, salary	$ 137 50	
Charles Howard, Deputy Chief of Police, salary	1,400 00	
George R. Davis, Deputy Chief of Police, salary	1,138 22	
		2,675 72

Paid for SERVICES OF POLICE OFFICERS:

To Sundry persons, for services as regular Officers	$78,561 39	
Sundry persons for services as Special Officers, July 4th	196 51	
		78,757 90
Amount carried forward		$83,333 62

Amount brought forward			$83,333 62
Paid for FUEL:			
To Appropriation for Roads and Bridges, for teaming coal	$ 38 63		
Appropriation for Reserved Fund, for coal	107 61		
Appropriation for Paupers, for wood,	3 13		
D. W. Horne & Son, for coal	162 08		
William E. Livingston, for coal	317 47		
			628 92
Paid for SUNDRIES:			
To Appropriation for Roads and Bridges, for teaming and labor	$ 5 00		
Appropriation for Public Buildings, for labor	40 20		
Appropriation for Water Works, for water	187 20		
Lowell Gas Light Co., for gas	485 14		
New England Telephone and Telegraph Co., for use of telephone,	213 77		
New England Telephone and Telegraph Co., for rent of private line and instruments to December 1, 1891	788 67		
Gamewell Fire Alarm Telegraph Co., for construction Police Telegraph System	9,615 00		
William G. Bumps, for conveyance of prisoners	146 97		
Peter Cawley, for conveyance of prisoners	163 51		
David J. Donaldson, for key, cash paid for teaming, etc	9 55		
J. G. Favor, for postage, expenses of committee, etc	20 63		
Frank Goodwin, for cash paid for teaming liquor, etc	50 90		
Charles Howard, for key, postage, refreshments, etc	98 50		
Daniel M. Hayes, for traveling expenses	119 92		
Amounts carried forward	$11,944 96		$83,962 54

Amounts brought forward	$11,944 96	$83,962 54

Paid for SUNDRIES:

To E. J. Noyes, for postage, expenses of committee, etc	13 20	
George B. Palmer, for blank book, traveling expenses, etc	34 95	
Francis Day, for services and expenses as spotter	21 45	
Amasa Pratt & Co., for lumber	1 00	
H. R. Barker Manufacturing Co., for labor	1 30	
Frank H. Derby, for electrical apparatus	13 35	
S. H. Jones, for pipe, fittings, and labor	16 05	
H. H. Wilder & Co., for labor, fittings, etc	3 50	
J. J. Cluin, for clock and repairing badges	8 55	
John B. Lovell Arms Co., for newsboys' badges	75 00	
O. A. Richardson, for keys and repairing locks	3 20	
Edwin Rogers and W. E. Decrow, for fire-alarm indicator	250 00	
Cahill Bros., for shoeing horses	39 65	
Charles Clapp, for difference in horses exchanged	50 00	
Dyar & Patterson, for repairing harnesses	3 50	
H. F. Ebert, for harnesses, repairing harnesses, etc	281 90	
H. K. Ferrin, for difference in sleighs exchanged	25 00	
Fay Bros. & Hosford, for repairing carriages	96 99	
Edward E. Hill, for repairing carriages	12 10	
M. V. B. Libbey, for blacksmithing	65 15	
Charles Robinson, for difference in horses exchanged	45 00	
Edwin Sanborn, for repairing carriages	37 82	
Amounts carried forward	$13,043 62	$83,962 54

Amounts brought forward	$13,043 62	$83,962 54
Paid for SUNDRIES:		
To H. G. & H. W. Stevens Co., for repairing carriage	26 00	
Sawyer Carriage Co., for repairing carriage	40 85	
Robert E. Wescott, for bay horse	200 00	
G. A. Andrews, agent for carlo cressol	4 00	
F. H. Butler & Co., for insect poison,	14 00	
Buttrick & Co., for tea, coffee, and sugar	137 49	
C. B. Coburn & Co., for mops, dusters, brnshes, ammonia, etc.	41 80	
L. Bacon Foss, for vaporizers	48 00	
Daniel Gage, for ice	45 37	
P. M. Jefferson & Co., for soap	3 00	
C. W. Lerned & Co., for insect powder	8 40	
W. H. Spalding & Co., for paper, moulding, labor, etc.,	52 50	
G. J. & D. Bradt, for crackers	132 50	
Lowell Co-operative Milk Association, for milk	15 30	
Charles H. Ricker, for professional services	26 00	
G. E. Livermore, for professional services	7 00	
Butterfield Printing and Binding Co., for paper blocks	1 00	
Campbell & Hanscom, for postal cards and printing	2 25	
H. C. Church & Son, for diaries and paper	61 00	
Citizen Newspaper Co., for printing,	4 00	
Loupret's Studio, for pictures	9 00	
J. Merrill & Son, for blank books, directories, paper, etc	20 30	
Morning Mail Co., for blank books and printing	44 55	
Taylor Bros., for stationery	1 95	
William P. Brazer & Co., for lap robe	7 00	
Middlesex Co., for cloth	388 12	
Amounts carried forward	$14,385 00	$83,962 54

Amounts brought forward.....	$14,385 00	$83,962 54

Paid for SUNDRIES:

To French & Puffer, for basket.....	3 00	
Waterbury Button Co., for buttons	45 00	
E. Sheppard & Sons, for bouquets,	1 20	
A. Whittet, for bouquets.....	1 25	
Johannah Doyle, for labor.....	335 00	
Lowell Steam Carpet Cleaning Works, for cleaning carpets....	5 72	
D. M. Prescott, for mason work and material	17 75	
Scripture's Laundry, for laundering,	3 40	
Fred A. Arlin, for clipping horses,	3 00	
Charles Clapp, for use of horse....	20 50	
Chase & Hunton, for board of horse and carriage hire.....	161 11	
George W. Norris, for board of horse and carriage hire.....	784 93	
George W. Richardson, for board of horse	107 92	
Charles B. Thompson, for carriage hire	2 00	
		15,876 78
Total expenditure for the year 1890....		$99,839 32

FIRE DEPARTMENT.

Appropriated and assessed in 1890.....	$80,000 00	
		$80,000 00

RECEIPTS.

Received into the treasury on account of FIRE DEPARTMENT:		
From Appropriation for Water Works, for pumping water from ditch in Market Street.....	$ 10 00	
E. S. Hosmer, for sale of horses, cloth, etc.....	530 00	
Sheppard, Russell & Co., for moving poles on Fairmount Street	20 00	
Lowell Institution for Savings, on loan	20,000 00	
		20,560 00
		$100,560 00

EXPENDITURES.

Paid CHIEF ENGINEER AND ASSISTANT ENGINEERS:		
To Edward S. Hosmer, Chief Engineer, salary	$1,500 00	
Amount carried forward.....	$1,500 00	

Amount brought forward.....	$1,500 00	
Paid CHIEF ENGINEER AND ASSISTANT ENGINEERS:		
To James F. Norton, First Assistant Engineer and Clerk, salary	325 00	
H. W. Burton, Assistant Engineer, salary.....	240 63	
Edward Meloy, Assistant Engineer, salary	275 00	
George F. Salmon, Assistant Engineer, salary.....	275 00	
		$ 2,615 63
Paid for SERVICES OF CALL FIREMEN:		
To members of the several companies, for services for the year ending Oct. 31, 1890.....	$16,466 46	
		16,466 46
Paid for SERVICES OF PERMANENT FIREMEN:		
To members of the several companies, for services for the year 1890..	$46,963 27	
		46,963 27
Paid for FUEL:		
To Appropriation for Schools, for coal,	$ 68 05	
Appropriation for Roads and Bridges, for teaming coal.....	141 83	
Appropriation for Reserved Fund, for coal.....	155 80	
Appropriation for Paupers, for wood,	44 00	
Cawley Bros., for coal.....	157 95	
D. W. Horne & Son, for coal.....	167 28	
William Kittredge Co., for coal and charcoal	218 55	
William E. Livingston, for coal....	1,320 07	
		2,273 53
Amount carried forward.....		$68,318 89

Amount brought forward		$68,318 89
Paid for HAY, GRAIN, ETC.:		
To J. B. Cover & Co., for hay, oats, and straw	$ 213 87	
C. G. Coburn, for standard food	13 50	
G. M. Foster, for hay	240 82	
George B. Fuller, for hay	25 11	
Samuel Horn, for hay	11 43	
William E. Livingston, for straw, oats, shorts, etc	448 88	
Thomas J. McDonald, for oats, straw, salt, shorts, etc	2,297 57	
J. S. McIlvaine, for hay	109 75	
O'Heir & Marin, for hay	545 49	
A. G. Stiles & Co., for oats and straw	195 22	
E. S. Sherman & Co., for salt, oats, corn, etc	56 25	
E. N. Wood & Co., for salt, oats, shorts, etc	279 99	
		4,437 88
Paid for HORSES, CARRIAGES, HARNESSES, ETC.:		
To Charles Clapp, for horses, and difference in horses exchanged	$1,200 00	
C. H. Hanson, for horses, and difference in horses exchanged	1,275 00	
George F. Allen, for bit and spreader	2 35	
Fred A. Arlin, for clipping horse	3 00	
Robert Barris, for repairing harnesses	8 50	
R. F. Britton, for clipping horses	10 00	
T. M. Bolton & Co., for repairing harnesses	7 25	
S. L. Butman, for repairing harnesses	38 25	
Charles E. Berry, for horse-collar, and repairing harnesses	197 25	
E. P. Bryant, for repairing carriages, etc	213 91	
Amounts carried forward	$2,955 51	$72,756 77

Amounts brought forward	$2,955 51	$72,756 77
Paid for HORSES, CARRIAGES, HARNESSES, ETC.:		
To F. J. Burlingham, for whips	15 74	
T. B. Chapman, for repairing carriage	9 00	
Dyar & Patterson, for repairing harnesses	5 25	
J. C. Donovan, for harness	33 00	
O. K. Dexter, for repairing carriage,	30 00	
H. F. Ebert, for repairing harnesses,	323 11	
Fay Bros., for repairing carriages	782 10	
Fay Bros. & Hosford, for repairing carriages	122 10	
Edward E. Hill, for repairing carriages	29 50	
C. H. Hanson, for brushes, blankets, hoof ointment, harness dressing, etc	81 05	
A. S. Jackson, for hooks, snaps, and repairing harnesses	82 50	
Joel Knapp & Son, for pole-flanges,	2 40	
Manchester Locomotive Works, for repairing steamer, etc	98 31	
A. W. Mead, for repairing harnesses,	18 15	
J. H. Swett, for repairing carriages,	147 64	
Sawyer Carriage Co., for hose-wagon, and repairing carriages and wagons	680 31	
Edwin Sanborn, for repairing carriages	7 00	
		5,422 67
Paid for SUNDRIES:		
To Appropriation for Roads and Bridges, for labor	$ 1 75	
Appropriation for Public Buildings, for labor and material	25 01	
Appropriation for Water Works, for pipe, lead, labor, etc	14 70	
Appropriation for Water Works, for water	10,192 50	
Amounts carried forward	$10,233 96	$78,179 44

Amounts brought forward	$10,233 96	$78,179 44
Paid for SUNDRIES:		
To Lowell Gas Light Co., for gas	704 34	
New England Telephone and Telegraph Co., for bells, back-board, freight, and service	744 65	
Globe Gas Light Co., for torch	6 00	
Badger & Kimball, for lumber and labor	1 80	
Burnham, Forrest & Davis, for lumber	69 25	
A. L. Brooks & Co., for lumber	70	
S. W. Fletcher, for door	1 00	
Howe Bros. & Co., for lumber	24 74	
Mark Holmes, Jr., & Son, for lumber and labor	8 90	
J. H. Murray, for chestnut poles	154 30	
Amasa Pratt & Co., for lumber	77 10	
Charles E. Adams, for hardware and tools	62 90	
Warren Aldrich, for screws	4 50	
American Bolt Co., for plates and bolts	3 39	
Bartlett & Dow, for hardware and tools	20 03	
Boutwell Bros., for steel and labor	9 66	
Cole & Nichols, for castings	35 05	
D. Lovejoy & Son, for steel and labor	8 04	
Pevey Bros., for castings	243 67	
H. B. Shattuck, for hardware	60 14	
A. L. Smith, for composition	4 27	
Frederick Taylor Co., for hardware, tools, etc	411 35	
Union Brass Foundry, for castings,	6 75	
J. J. Adams, for filing saws	3 91	
American Steam Gauge Co., for repairing gauge	3 00	
H. R. Barker Manufacturing Co., for valves, globes, pipe, fittings, burners, labor, etc	507 63	
C. G. Braxmar, for badges	74 75	
Burch, Fenton & Co., for hardware and repairing saws	1 02	
Amounts carried forward	$13,486 80	$78,179 44

Amounts brought forward	$13,486 80	$78,179 44
Paid for SUNDRIES:		
To Cornelius Callahan Co., for hose, pipe, nozzles, gong-striker, etc	1,516 50	
T. Costello & Co., for labor	6 00	
Frank H. Derby, for wire, cells, electrical apparatus, etc	11 37	
Richard Dobbins, for castings and labor	18 30	
L. A. Derby & Co., for rubber tape, burner, and labor	17 23	
Eastern Electric Light and Storage Battery Co., for cells, rubber, and labor	2 70	
A. Fenton, for keys and filing saws,	1 40	
Gethins Electrical Manufacturing Co., for batteries	39 30	
C. F. Haskell, for filing saws	34	
S. F. Hayward & Co., for extinguishers	129 00	
S. H. Jones, for valves, fittings, bolts, labor, etc	407 53	
Joel Knapp & Son, for labor	1 47	
A. I. Laughton, for zinc, solder, labor, etc	6 98	
W. A. Mack & Co., for tin box, tunnel, basins, labor, etc	123 74	
A. F. Nichols, for castings	9 06	
Nason B. Parsons, for filing saws	1 00	
C. W. Pearsall, for nozzle	15 00	
Rice & Co., for wire and labor	3 44	
Edwin Rogers and W. E. Decrow, for fire-alarm, indicators, gong, wire, etc	899 26	
Scannell & Wholey, for repairing boilers	259 97	
Union Plating Manufacturing Co., for plating	39 90	
D. H. Wilson & Co., for solder and labor	18 38	
H. H. Wilder & Co., for ash-hods	15 05	
Samuel Young, for wire, rubber, and labor	1 84	
C. Zimmer, for filing saws	70	
Amounts carried forward	$17,032 26	$78,179 44

Amounts brought forward	$17,032 26	$78,179 44
Paid for SUNDRIES:		
To O. E. Averill, for shoeing horses and blacksmithing	121 75	
Cahill Bros., for shoeing horses....	154 35	
John A. Clark, for shoeing horses...	93 73	
M. V. B. Libbey, for shoeing horses,	157 60	
A. Parsons, for shoeing horses and blacksmithing.....	112 91	
C. C. Thompson, for shoeing horses,	371 52	
Boston Woven Hose Co., for nozzles, handles, and labor.....	8 75	
John Cross, for canvas spreads....	14 20	
Josiah Gates & Sons, for hose and couplings	82 82	
Adams & Co., for tables.....	31 00	
W. T. Bradley, for oil-cloth, mirror, spittoons, labor, etc.....	153 70	
Joseph H. Cleary, for chairs, tables, mirrors, etc.....	63 25	
French & Puffer, for baskets, mops, cuspidores, etc.....	47 57	
E. Hapgood & Son, for hair, mattresses, and ticking.....	131 50	
A. L. Kittredge, for curtains, shades, and fixtures.....	85 76	
Lowell Steam Carpet Cleaning Works, for cleaning carpets...	10 34	
Middlesex Co., for cloth.....	391 72	
Marshall & Crosby, for moulding, whitewood, etc.....	9 14	
J. F. Puffer & Son, for rugs.....	38 00	
A. G. Pollard & Co., for towels, quilts, cloth, comforters, etc....	193 97	
Edward F. Page & Co., for brooms,	40 00	
W. H. Spalding & Co., for shades and fixtures.....	15 81	
Sherman & Manning, for carpets...	93 31	
Durant & Rogers, for badges and repairing plate.....	63 25	
Alvin Lawrence, for regulator, repairing clocks, etc.....	119 50	
H. C. Church & Son, for ink, waste, paper, etc.....	67 06	
Amounts carried forward	$19,704 77	$78,179 44

Amounts brought forward	$19,704 77	$78,179 44
Paid for SUNDRIES:		
To Vox Populi Press, for badges	7 00	
Bay State Hoof Packing Co., for medicine	1 50	
Boston Chemical Co., for liniment	2 30	
Carleton & Hovey, for medicine	2 01	
C. B. Coburn & Co., for oil, ammonia, cord, glass, benzine, etc	382 86	
C. G. Coburn, for rent, oil, chimneys, etc	41 50	
Charles E. Carter, for medicines and chemicals	12 65	
A. C. Daniels, for medicine	40 00	
Ellingwood & Co., for elatol powder	35 25	
Hartwell & Co., for soap	13 86	
J. Hinman, for extinguishers	100 00	
H. A. Johnson, for polish	4 00	
Austin Keith, for medicine	50	
G. Lawrence, for condition powders,	6 00	
Lowell Rubber Co., for stopples	2 67	
C. B. Merrill, for harness dressing	14 00	
Simpson & Rowland, for matches	10 00	
H. O. Stevenson, for medicine	31 85	
Talbot Dyewood & Chemical Co., for ammonia and vitriol	347 56	
S. E. Tweed & Co., for liniment	10 00	
White Mountain Axle Oil Co., for oil	2 99	
Darius Whithed, for soap	72 74	
Middlesex Steam Laundry, for laundering	101 50	
Scripture's Laundry, for laundering,	15 72	
E. S. Hosmer, for postage stamps, traveling expenses, etc	163 10	
James F. Norton, for services as Chief Engineer	28 70	
G. H. Welch, for refreshments	6 50	
Spencer & Redmond, for signs	1 50	
Staples Bros., for mason work and material	51 25	
A. W. Baker, for veterinary dentistry	58 00	
Amounts carried forward	$21,272 28	$78,179 44

Amounts brought forward	$21,272 28	$78,179 44
Paid for SUNDRIES:		
To Jesse Viles, for professional services	144 50	
Robert Wood, for professional services	134 50	
Fred W. Jenness, for pasturing horses	27 50	
B. G. Brown, for use of horse	25 00	
Charles Clapp, for use of horse	30 00	
C. H. Hanson, for teaming	32 50	
Morse & Sparks, for carriage hire	18 00	
Murphy and Bingham, for carriage hire	6 00	
American Express Co., for transportation	9 50	
Boston & Lowell Express Co., for transportation	3 85	
Lovejoy-Paul Express Co., for transportation	7 30	
Boston & Maine Railroad, Lowell System, for transportation	37 57	
Boston & Maine Railroad, for transportation	25	
		21,748 75
Total expenditure for the year 1890		$99,928 19
Transferred to Appropriation for Paupers		504 96
		$100,433 15
Balance undrawn Dec. 31, 1890		126 85
		$100,560 00

SEWERS AND DRAINS.

Appropriated and assessed in 1890.....	$20,000 00	
		$20,000 00

RECEIPTS.

Received into the treasury on account of SEWERS AND DRAINS:		
From Appropriation for Improvement of Andover Street Sewer System, for services of engineers, labor, material, etc.....	$1,052 21	
H. P. Beals, for sale of diaphragm and iron.....	10 42	
D. Moody Prescott, for engine...	100 00	
		1,162 63
Received of SUNDRY PERSONS, FOR REMOTE DRAINAGE:		
From Mrs. C. Whitely, Andrews Street,	$15 00	
Estate F. A. Hildreth, Aiken Avenue	22 28	
Thomas Nesmith, Aiken Avenue,	3 69	
George C. Prince, Aiken Avenue,	20 00	
Cyrus O. Barclay, Barclay Street,	30 85	
S. B. Puffer, Bridge Street.....	23 80	
Appropriation for Paupers, Cross Street	22 00	
Amounts carried forward	$137 62	$21,162 63

Amounts brought forward.....	$137 62	$21,162 63
Received of SUNDRY PERSONS, FOR REMOTE DRAINAGE:		
From Mary N. Brosnahan, Concord Street	15 00	
John J. Donovan, Central Street,	23 90	
Estate Charles M. Jones, Charles Street	17 41	
David Perkins, Chambers Street,	11 20	
Henry Runels, Chester Street...	25 00	
Henry F. Eastman, Davis Street,	9 37	
R. Hutchinson, Dudley Court....	17 55	
M. L. and M. Jones, Dalton Street	12 37	
William T. Kenneson, Dalton Street	12 37	
John J. Sweeney, Dalton Street,	7 97	
Appropriation for Public Buildings, Fayette Street.....	23 43	
M. Bohanan, Fayette Street.....	10 61	
Thomas Carolin, Fayette Street,	16 57	
Estate C. A. F. Swan, Fayette Street	10 00	
C. Sullivan, Fayette Street.....	20 00	
Josiah Butler, Foster Street.....	22 17	
E. L. Giles, Foster Street.....	45 30	
George M. Ward, Fletcher Street,	16 13	
J. W. Jantzen, Gorham Street...	20 00	
Robert Gallagher, Green Street..	5 00	
John F. Noyes, Green Street....	18 25	
E. H. Duprez, Hall Street.....	26 25	
Estate of Jonathan Hope, Hale Street	50 00	
John T. Masterson, Jewett Street,	21 00	
Samuel N. Harris, Liberty Street,	26 74	
S. P. Pike, Middlesex Street....	14 00	
H. B. Shattuck, Middlesex Street,	40 05	
William B. Spaulding, Middlesex Street	35 60	
L. R. J. and D. H. Varnum, May Street	13 00	
Kate F. Fox, Newhall Street....	15 23	
Henry M. Hyde, Perkins Street,	13 12	
Amounts carried forward.....	$752 21	$21,162 63

Amounts brought forward	$752 21	$21,162 63
Received of SUNDRY PERSONS, FOR REMOTE DRAINAGE:		
From John J. Dawson, Pawtucket Street	25 00	
A. W. Parker, Pine Street	10 00	
Mary Ann Clark, River Street	6 36	
Robert Tweed, River Street	12 25	
A. P. Varney, South Loring Street	15 00	
W. L. Lamson, Sherman Street	86 00	
J. H. Derby, South Whipple Street	19 40	
W. C. Stevenson, Stevens Street,	24 00	
William Ginney, School Street	19 42	
Mrs. E. E. Kimball, School Street,	15 40	
Mrs. E. E. Kimball, School Street,	9 47	
Frank E. Lewis, South Walker Street	10 00	
A. L. Russell, South Walker Street	84 70	
John G. Sherburne and Charles M. Williams, Suffolk Street	10 41	
Heirs of Ann McGovern, Warren Street	7 50	
C. C. Coburn, Westford Street	27 85	
J. A. Coram, Western Avenue	68 00	
Susie A. Mansfield, White Street,	14 11	
Thomas May, Woodward Avenue,	25 00	
Thomas H. Elliott, Walker Street,	35 60	
C. A. Kemp, Walker Street	25 90	
S. G. Mack, Walker Street	17 94	
Stephen L. Young, Walker Street,	15 00	
		1,336 52
Received for SEWER ASSESSMENTS:		
From Charles A. Blodgett, A Street	$ 21 07	
Oscar A. Draper, A Street	31 60	
J. D. Emery, A Street	20 47	
Thomas H. Elliott, A Street	94 82	
Silas W. Fletcher, A Street	26 33	
Amounts carried forward	$194 29	$22,499 15

Amounts brought forward.....	$194 29	$22,499 15
Received for SEWER ASSESSMENTS:		
From George W. Fifield, A Street....	26 33	
Charles T. Fish, A Street.....	57 94	
Frank Hoyt, A Street.....	28 97	
Eugene F. Lewis, A Street.....	21 07	
Catharine O'Donohue, A Street..	52 67	
Maria F. Phillips, A Street.....	55 30	
John W. Peppard, A Street.....	21 07	
John W. Peppard, A Street.....	21 07	
John L. Barnard, B Street.....	35 72	
Nancy Cox, B Street.....	28 58	
George L. Clark, B Street.....	39 30	
John M. Dean, B Street.....	57 16	
Philias David, Jr., B Street.....	62 52	
James Gregory, B Street.....	4 27	
Adolph T. Hanson, B Street.....	26 44	
Frederick D. Morrison, B Street,	26 44	
James A. Spiers, B Street.....	42 87	
J. P. Thompson, B Street.....	35 72	
J. P. Thompson, B Street.....	19 65	
David Whittaker, B Street.....	35 72	
David Whittaker, B Street.....	35 72	
William O. Brown, Chester Street,	13 80	
Ethan A. Smith, Chester Street..	14 59	
Paul Vigeant, Decatur Street....	21 49	
John G. Stedman, Edson Street..	13 53	
Amos M. Kyle, Fayette Street...	68 55	
William H. Baldwin, Gorham Street	75 52	
F. H. Butler, Gorham Street....	69 37	
Charles S. Bean, Gorham Street..	10 81	
Charles S. Bean, Gorham Street .	10 63	
Mrs. Julia A. Field, Gorham Street	65 38	
Margaret A. Fleck, Gorham Street	50 70	
Warren Fox, Gorham Street....	47 19	
Margaret Gately, Gorham Street,	40 32	
Lewis D. Gumb, Gorham Street..	30 96	
George H. and Charles A. Gilman, Gorham Street.....	9 16	
Amounts carried forward...	$1,470 82	$22,499 15

Amounts brought forward	$1,470 82	$22,499 15
Received for SEWER ASSESSMENTS:		
From Thomas Muldoon, Gorham Street,	53 00	
Middlesex North Agricultural Society, Gorham Street	51 65	
James G. Marshall, Gorham Street,	67 50	
James G. Morrison, Gorham Street	9 38	
Charles and Dorcas Osgood, Gorham Street	325 12	
Elbridge G. Parker, Gorham Street	33 19	
Elizabeth Thornton, Gorham Street	45 51	
John Warburton, Gorham Street,	84 34	
Levi Barnes, Howland Court and Mammoth Road	14 35	
Thomas F. Burgess, Hastings Street	22 34	
Thomas F. Burgess, Hastings Street	22 42	
Thomas F. Burgess, Hastings Street	263 01	
Charles B. Stevens, Hastings Street	26 97	
G. C. Bassett, Hudson Street	10 13	
G. C. Bassett, Hudson Street	10 52	
Mary Conway, Hudson Street	12 26	
Amos M. Kenneson, Hudson Street	20 23	
Michael Murphy, Hudson Street,	10 15	
George Wasson, Hudson Street	23 87	
George Wasson, Hudson Street	66 90	
David Harding, Harding and Warwick Streets	33 34	
David Harding, Harding and Warwick Streets	33 34	
E. W. Trueworthy, Hazeltine Street	4 41	
George Wilkins, Hazeltine Street,	12 18	
William H. Baldwin, London Street	50 48	
Amounts carried forward	$2,777 41	$22,499 15

Amounts brought forward	$2,777 41	$22,499 15
Received for SEWER ASSESSMENTS:		
From John J. Barrow, London Street	28 10	
J. J. Huntley, London Street	35 13	
William Knowles, London Street,	35 13	
William B. Moffatt, London Street	14 05	
William B. Moffatt, London Street	14 05	
Sarah A. Banfill, Mount Grove Street	36 97	
James Richardson, Mount Grove Street	32 62	
Robert Goulding, Marlborough Street	150 17	
Mark Holmes, Jr., & Son, Marlborough Street	47 42	
Milo B. Stiles, Marlborough Street,	19 37	
Ethan A. Smith, Marlborough Street	77 86	
Ethan A. Smith, Marlborough Street	204 95	
Ethan A. Smith, Marlborough Street	47 42	
Ethan A. Smith, Marlborough Street	47 42	
Ethan A. Smith, Marlborough Street	13 48	
Ethan A. Smith, Marlborough Street	13 11	
Ethan A. Smith, Marlborough Street	16 72	
Ethan A. Smith, Marlborough Street	20 90	
Ethan A. Smith, Marlborough Street	13 93	
Estate of J. W. Colby, Moody Street	16 82	
Charles B. Batchelder, New School Street	9 92	
John B. Molleur, New School Street	14 03	
Amounts carried forward	$3,686 98	$22,499 15

Amounts brought forward	$3,686 98	$22,499 15
Received for SEWER ASSESSMENTS:		
From Julia E. Cornock, Oakland Street,	46 88	
Ethan A. Smith, Oakland Street	4 18	
S. W. Cook, Porter and Clay Streets	41 77	
Nathan D. Pratt, Porter and Clay Streets	24 25	
William Kittredge Co., Perry Street	41 07	
Luther Richards, Perry Street	6 39	
E. A. Smith and F. B. Shedd, Perry Street	103 86	
E. A. Smith and F. B. Shedd, Perry Street	4 31	
E. A. Smith and F. B. Shedd, Perry Street	2 83	
E. A. Smith and F. B. Shedd, Perry Street	8 48	
E. A. Smith and F. B. Shedd, Perry Street	8 48	
E. A. Smith and F. B. Shedd, Perry Street	8 48	
J. J. Mehan, Pleasant Street	30 62	
J. J. Mehan, Pleasant Street	30 62	
James Gregory, Powell Street	38 05	
Josiah T. Corner, South Walker Street	12 34	
Oliver B. Edwards, South Walker Street	12 34	
Charles Griffin, South Walker Street	26 07	
Fred A. Lewis, South Walker Street	12 34	
Fred A. Lewis, South Walker Street	12 34	
Fred A. Lewis, South Walker Street	12 34	
Fred A. Lewis, South Walker Street	12 34	
George O. White, South Walker Street	12 34	
Amounts carried forward	$4,199 70	$22,499 15

Amounts brought forward.....	$4,199 70	$22,499 15
Received for SEWER ASSESSMENTS:		
From Charles L. Knapp, Sherman and Hanks Streets.....	36 20	
John E. Drury, Sherman and Hanks Streets.....	39 90	
Eugene F. Morrill, Sherman and Hanks Streets.....	27 43	
George W. Raynes, Sherman and Hanks Streets.....	56 25	
John Stott, Sherman and Hanks Streets.....	62 68	
John Stott, Sherman and Hanks Streets.....	37 42	
Children of J. Gates, Sheldon and Royal Streets.....	40 30	
Children of J. Gates, Sheldon and Royal Streets.....	45 05	
Children of J. Gates, Sheldon and Royal Streets.....	45 59	
Children of J. Gates, Sheldon and Royal Streets.....	45 59	
Children of J. Gates, Sheldon and Royal Streets.....	52 66	
Children of J. Gates, Sheldon and Royal Streets.....	44 62	
Joseph Evans, Sheldon and Royal Streets.....	45 59	
Alex L. McKee, Sheldon and Royal Streets.....	39 34	
John A. Pullen, Sheldon and Royal Streets.....	36 26	
Emma Sanborn, Sheldon and Royal Streets.....	43 42	
George A. Clarry, School Street..	22 80	
G. H. and C. A. Gilman, School Street	93 87	
Sager Ashworth, Third Avenue..	25 75	
Sager Ashworth, Third Avenue..	25 75	
Michael T. Brown, Third Avenue,	25 75	
Percival P. Burbank, Third Avenue.....	25 75	
Amounts carried forward.....	$5,117 67	$22,499 15

Amounts brought forward.....	$5,117 67	$22,499 15
Received for SEWER ASSESSMENTS:		
From Michael Coyne, Third Avenue...	25 75	
William T. Griffin, Third Avenue,	25 75	
Hugh McQuade, Third Avenue..	25 75	
Patrick Riley, Third Avenue....	25 75	
David S. Spaulding, Third Avenue.....	25 75	
David S. Spaulding, Third Avenue	25 75	
John A. Walsh, Third Avenue...	25 75	
Estate of Charles B. Alverson, Vernon Street.....	47 18	
Ruth M. Rugg, Vernon Street...	18 06	
Ruth M. Rugg, Vernon Street...	42 58	
Ruth M. Rugg, Vernon Street...	120 20	
William H. Anderson, Woodward Avenue, Davis and Court Streets.....	20 90	
Estate of James C. Ayer, Woodward Avenue, Davis and Court Streets.....	451 29	
R. E. Bradon, Woodward Avenue, Davis and Court Streets....	39 49	
Maria Benson, Woodward Avenue, Davis and Court Streets,	143 79	
Bridget Bergom, Woodward Avenue, Davis and Court Streets,	242 60	
Phœbe Evans, Woodward Avenue, Davis and Court Streets,	156 33	
Thomas H. Elliott, Woodward Avenue, Davis and Court Streets,	20 94	
Oliver S. Flint, Woodward Avenue, Davis and Court Streets,	88 49	
Sarah A. Hill, *et als.*, Woodward Avenue, Davis and Court Streets.....	57 04	
Francis Jewett and E. C. Swift, Woodward Avenue, Davis and Court Streets.....	121 67	
Michael McDermott, Woodward Avenue, Davis and Court Streets....	26 62	
Amounts carried forward	$6,895 10	$22,499 15

Amounts brought forward.....	$6,895 10	$22,499 15
Received for SEWER ASSESSMENTS:		
From Susan Mooney, Woodward Avenue, Davis and Court Streets,	37 39	
Alphonso Marsigney, Woodward Avenue, Davis and Court Streets.....	23 97	
Martha Smith, Woodward Avenue, Davis and Court Streets,	58 99	
David S. Spaulding, Woodward Avenue, Davis and Court Streets	21 33	
David S. Spaulding, Woodward Avenue, Davis and Court Streets.....	19 17	
David S. Spaulding, Woodward Avenue, Davis and Court Streets.....	19 17	
David S. Spaulding, Woodward Avenue, Davis and Court Streets	19 17	
David S. Spaulding, Woodward Avenue, Davis and Court Streets.....	74 53	
George P. Walker, Woodward Avenue, Davis and Court Streets,	20 94	
George P. Walker, Woodward Avenue, Davis and Court Streets,	26 88	
John Washington, Woodward Avenue, Davis and Court Streets,	24 92	
David L. Bradt, White Street ...	83 25	
Martha Chadwick, White Street..	31 42	
Thomas Crowther, White Street..	23 88	
A. F. Cogger, White Street	31 42	
William O. Coram, White Street,	28 28	
Hugh Doherty, White Street....	34 56	
James W. Ellis, White Street ...	61 78	
James W. Ellis, White Street....	37 09	
Frank J. Gormley, White Street,	37 70	
Benjamin Hoyle, White Street...	31 42	
Joseph B. Howell, White Street..	25 22	
James Lynch, White Street.....	31 42	
Amounts carried forward	$7,699 00	$22,499 15

Amounts brought forward.....		$7,699 00	$22,499 15
Received for SEWER ASSESSMENTS:			
From A. A. Putnam, White Street.....		23 25	
Michael Sullivan, White Street...		32 05	
Timothy Wholey, White Street..		34 56	
L. G. Fosdick, Washington Street		37 50	
James R. Grant, Washington Street		37 50	
Joshua M. Hadley, Washington Street		75 00	
William A. Ingham, Washington Street		25 09	
William A. Ingham, Washington Street		24 00	
William A. Ingham, Washington Street		33 75	
William A. Ingham, Washington Street		20 00	
William A. Ingham, Washington Street		33 75	
Thomas Kenney, Washington Street		75 00	
P. O'Rourke, Washington Street,		63 75	
B. G. Brown, Westford and Foster Streets.....		38 73	
Joseph C. Batchelder, Westford and Foster Streets.....		42 60	
Ethan A. Smith, Westford and Foster Streets.....		46 47	
Ethan A. Smith, Westford and Foster Streets.....		42 40	
Ethan A. Smith, Westford and Foster Streets.....		26 91	
Milo B. Stiles, Westford and Foster Streets.....		92 87	
George S. Smith, Westford and Foster Streets.....		38 73	
John G. Stedman, Westford and Foster Streets.....		16 31	
John G. Stedman, Westford and Foster Streets.....		49 02	
Amounts carried forward.....		$8,608 24	$22,499 15

Amounts brought forward.....	$8,608 24	$22,499 15
Received for SEWER ASSESSMENTS:		
From John G. Stedman, Westford and Foster Streets.....	49 04	
John G. Stedman, Westford and Foster Streets.....	46 07	
		8,703 35
		$31,202 50

EXPENDITURES.

Paid for LABOR, AS PER PAY-ROLLS:		
In January.....	$ 872 88	
February.....	611 00	
March	688 00	
April	756 69	
May.....	1,041 52	
June.....	706 88	
July.....	750 13	
August	1,696 27	
September	921 13	
October.....	1,108 26	
November	1,068 36	
December	623 62	
		$10,844 74
Paid for PIPE, BRICK, CEMENT, LUMBER, HARDWARE, ETC.:		
To Badger & Kimball, for lumber.....	$ 4 50	
Burnham, Forrest & Davis, for lumber.....	44 90	
A. P. Bateman, for lumber.....	19 26	
Davis & Sargent, for lumber.....	28 08	
Amounts carried forward.....	$96 74	$10,844 74

Amounts brought forward	$96 74		$10,844 74
Paid for PIPE, BRICK, CEMENT, LUMBER, HARDWARE, ETC.:			
To Howe Bros. & Co., for lumber	51 43		
Amasa Pratt & Co., for lumber	6 75		
American Bolt Co., for bolts	17 96		
Boutwell Bros., for iron	3 45		
Cole & Nichols, for castings	29 84		
H. W. Clapp & Co., for grates	19 20		
A. F. Nichols, for castings	6 93		
H. B. Shattuck, for hardware, etc.	24 75		
Frederick Taylor Co., for hardware,	12 35		
C. J. Cheney, Jr., for drain pipe and labor	80 95		
Cawley Bros., for drain pipe	8 65		
Edward Cawley, for drain pipe, etc.,	50 30		
Howard & Wilson, for pipe, cement, and brick	110 33		
Charles A. Kendall, for drain pipe	15 24		
William E. Livingston, for brick, cement, and sand	680 54		
Staples Bros., for pipe, grates, etc.	354 19		
Salem Water Board, for pipe	152 70		
J. W. Bennett, for sand	1 25		
E. A. & A. T. Smith, for concrete	7 50		
S. H. Weaver & Son, for sand	4 00		
			1,735 05
Paid for SUNDRIES:			
To Appropriation for Roads and Bridges, for services of City Engineer, Superintendent of Streets, keeping horse, labor, etc	$1,650 36		
Appropriation for Reserved Fund (maps), for services of Engineer's assistants	46 17		
Appropriation for Paupers, for wood,	4 50		
Appropriation for Water Works, for water	12 00		
Amounts carried forward	$1,713 03		$12,579 79

Amounts brought forward	$1,713 03	$12,579 79
Paid for SUNDRIES:		
To Patrick F. Brady, for constructing sewer in Harding and Warwick Streets	2,234 54	
Patrick F. Brady, for extra labor on sewer in Harding and Warwick Streets	67 50	
Patrick F. Brady, for constructing sewer in Haseltine Street	170 00	
Patrick F. Brady, for constructing sewer in Fayette Street	159 00	
C. J. Cheney, Jr., for drain pipe, and labor in Central Street	200 00	
C. J. Cheney, Jr., for constructing sewer in Blossom Street	397 50	
C. J. Cheney, Jr., for constructing sewer in June Street	40 04	
Edward Cawley, for constructing sewer in Sheldon and Royal Streets	2,619 69	
Edward Cawley, for constructing sewer in New School Street	236 32	
Edward Cawley, for constructing sewer in Decatur Street	375 41	
Edward Cawley, for constructing sewer in Marlborough Street	342 01	
Edward Cawley, for constructing sewer in Lincoln Street	443 22	
Edward Cawley, for constructing sewer in Dutton, Kitson, and Worthen Streets	2,444 47	
Thomas Nesmith, for sewer constructed by him in Dalton and Exeter Streets	167 53	
Proprietors of Locks & Canals, for sewer in Moody Street	1,462 00	
Staples Bros., for constructing sewer in Chester Street	72 14	
New England Telephone and Telegraph Co., for service	53 65	
H. R. Barker Manufacturing Co., for pipe	50	
Richard Dobbins, for sewer pipe	275 00	
Amounts carried forward	$13,473 55	$12,579 79

Amounts brought forward		$13,473	55	$12,579 79
Paid for SUNDRIES:				
To W. A. Mack & Co., for stove pipe			40	
Rollins & Son, for axe			95	
H. H. Wilder & Co., for jets		22	50	
C. Zimmer, for fitting keys			35	
Josiah Gates & Sons, for repairing hose, etc		25	50	
Page Belting Co., for suction hose		50	15	
Bacheller, Dumas & Co., for binding and lettering		3	75	
H. C. Church & Son, for stationery,		2	20	
Citizen Newspaper Co., for paper, printing, etc		15	25	
Hooper, Lewis & Co., for blank books,		2	50	
A. L. Kittredge, for paper and India ink		5	00	
Morning Mail Co., for blank books		11	50	
F. E. Rollins, for typewriting			30	
C. B. Coburn & Co., for pails, rope, packing, etc		20	00	
Greenwood Bros., for lantern globe,			35	
Joseph Miller, for salt		8	50	
William Nichols & Co., for pail			25	
Allen Bailey, for repairing rubber boots		1	50	
Boulger & McOsker, for rubber boots,		7	00	
A. M. Huntoon, for repairing rubber boots			85	
Lowell Rubber Co., for rubber boots		19	50	
Merrimack Rubber Co., for rubber boots		15	86	
Quinlan & Washburn, for rubber boots		4	50	
D. Swan, for rubber boots and repairing		7	12	
J. W. Crawford, for horse-car fare,		6	60	
George E. Evans, for traveling expenses of committee, postage, etc		33	78	
Fred W. Farnham, for horse-car fare,		10	45	
William H. Harrigan, for traveling expenses		1	70	
Amounts carried forward		$13,751	86	$12,579 79

Amounts brought forward	$13,751 86	$12,579 79
Paid for SUNDRIES:		
To Henry Hoole, for expenses of committee	12 50	
Charles I. Taylor & Co., for repairing draughting-board	7 00	
George F. Atkins, for glass, lettering, and painting	8 00	
Gorham Lawrence, for injury to horse	25 00	
L. A. McNeil, for damage to horse and carriage	60 00	
Samuel G. Parker, for rebate for remote drainage on Mason and New School Streets	85 00	
George W. Raynes, for rebate for remote drainage in Sherman Street	37 50	
Morse & Sparks, for carriage hire	5 50	
American Express Co., for transportation	15	
Boston & Maine Railroad, for transportation	25	
B. G. Brown, for teaming	28 00	
J. P. Fowler, for teaming	34 00	
C. H. Hanson, for teaming and use of horse	57 00	
C. E. Jones, for teaming	8 00	
Pendexter & Farley, for teaming	50 00	
Zephirin Roux, for teaming	52 00	
		14,221 76
Total expenditure for the year 1890		$26,801 55

TRANSFERS.

To Appropriation for Roads and Bridges,	$ 561 02	
Appropriation for Improvement of Andover Street Sewer System,	3,375 05	
Appropriation for Commons	464 88	
		4,400 95
		$31,202 50

IMPROVEMENT OF ANDOVER STREET SEWER SYSTEM.

Transferred from Appropriation for Sewers and Drains.....	$3,375 05	
		$3,375 05

EXPENDITURES.

Paid for SUNDRIES:

To Appropriation for Roads and Bridges, for services of City Engineer..	$ 173 25	
Appropriation for Reserved Fund, for services of Engineer's assistants	38 75	
Appropriation for Police, for services of officers.....	283 25	
Appropriation for Sewers and Drains, for lumber, tools, labor, etc	1,052 21	
Sundry persons, for labor as per payrolls	198 76	
Patrick F. Brady, on account of construction of sewer in Fayette Street	392 12	
Edward Cawley, on account of construction of sewer in Church and Andover Streets.....	1,232 66	
F. Blanche Hard, for typewriting..	4 05	
Total expenditures for the year 1890....		*$3,375 05

* Unfinished.

COMMONS.

Appropriated and assessed in 1890.....	$8,000 00	
		$8,000 00

RECEIPTS.

Received into the treasury on account of COMMONS:		
From Girard P. Dadman, City Clerk, for rent of lots on South Common	$ 315 00	
Avery Marshall, for sale of old machines.....	8 00	
Lowell Institution for Savings, on loan.....	6,000 00	
		6,323 00
		$14,323 00

TRANSFERS.

From Appropriation for Sewers and Drains.....	$464 88	
Appropriation for Library.....	262 50	
Appropriation for Health.....	108 85	
		836 23
		$15,159 23

EXPENDITURES.

Paid for LABOR AS PER PAY-ROLLS:			
In March	$ 50 12		
April	627 65		
May	1,300 00		
June	1,055 73		
July	1,082 12		
August	1,033 62		
September	823 22		
October	792 50		
November	424 75		
			$7,189 71
Paid for SUNDRIES:			
To Appropriation for Roads and Bridges, for crushed stone, labor, etc.	$ 98 00		
Appropriation for Public Buildings, for lumber and labor	77 08		
Appropriation for Water Works, for water	373 85		
Burnham, Forrest & Davis, for lumber	73 93		
Howe Bros. & Co., for lumber	102 42		
Whittet & McDonald, for lumber and labor	32 16		
American Bolt Co., for bolts, etc.	2 47		
Charles E. Adams, for hardware and paint	75 33		
Bartlett & Dow, for lawn mowers, shovels, rakes, etc.	157 08		
Boutwell Bros., for axles, wheels, and iron	48 68		
Charles F. Haskell, for keys and filing saw	6 88		
Horace B. Shattuck, for hardware	23 76		
Frederick Taylor Co., for twine and hardware	5 21		
J. H. Abbott, for blacksmithing	10 13		
F. Calvert, for repairing lawn mowers	4 50		
Amounts carried forward	$1,091 48		$7,189 71

Amounts brought forward.....	$1,091 48	$7,189 71
Paid for SUNDRIES:		
To T. Costello & Co., for dippers, pipe, and hose.....	33 94	
C. H. Hill, for grindstone handle...	75	
S. H. Jones, for repairing lawn mowers, etc.....	21 56	
Joel Knapp & Son, for repairing lawn mowers.....	5 00	
J. S. Mosher, for sharpening drills..	1 30	
A. Nourbourn, for repairing hoisting jacks	3 25	
A. L. Ready, for jack screw and shovels	4 60	
C. N. Rice, for filing saw.....	35	
Union Plating Manufacturing Co., for badge and plating.....	2 50	
Fred W. Stickney, for drawings for spring-house.....	40 00	
J. B. Varnum, for erecting spring-house, per contract.....	375 00	
J. C. Donovan, for oil, sponge, harness, and teaming..	265 75	
Edward E. Hill, for repairing wagon,	5 90	
Fred W. Jenness, for difference in wagons exchanged and teaming,	1,053 25	
E. Newton, for painting wagon....	12 00	
I. O. Ramsdell, for repairing wagons and blacksmithing.....	108 05	
A. L. Warren, for repairing wagons and blacksmithing.....	13 65	
O. Blodgett, for sods.....	33 00	
Michael Burns, for manure.....	3 50	
C. G. Coburn, for tools and guano..	256 59	
Cawley Bros., for manure and labor,	83 00	
John J. Donovan, for dirt.....	153 60	
R. and J. Farquhar, for bulbs.....	6 10	
W. H. Fuller, for filling.....	188 40	
Rev. A. M. Garin, for filling.....	48 30	
Andrew Goggin, for loam.....	203 00	
M. F. Gookin, for manure....	22 50	
A. J. Howe, for labor and material,	4 00	
William E. Livingston, for cement,	2 65	
Lyons & Burns, for manure.....	9 00	
Amounts carried forward...	$4,051 97	$7,189 71

Amounts brought forward	$4,051 97	$7,189 71
Paid for SUNDRIES:		
To T. J. McDonald, for fertilizer	247 00	
William E. Nichols & Co., for broom, fuse, oil	3 20	
James Pindar, for loam	276 00	
E. Sheppard & Sons, for flowers, plants and shrubs	231 84	
Staples Bros., for pipe, brick, and labor	31 10	
W. H. Spalding & Co., for oil, brushes, paint, etc	95 49	
A. Skene, for labor	10 00	
Avery Marshall, for use of horse	269 00	
H. B. Skene, for car fare	9 89	
John F. Webster, for plants, and shrubs	66 52	
P. H. Heelon, for carriage hire	4 00	
Morse & Sparks, for carriage hire	8 00	
John Brady, for teaming	328 50	
B. G. Brown, for teaming	196 00	
Edward Cawley, for drain pipe, labor, and teaming	107 92	
Conners Bros., for cement and teaming	743 05	
P. Cusick, for teaming	20 00	
Dunlap & Son, for teaming	201 80	
J. P. Fowler, for teaming	36 00	
C. H. Hanson, for loam and teaming,	344 00	
Thomas Kerwin, for teaming	1 00	
T. G. Little, for teaming	2 00	
F. A. Maynard, for teaming	33 60	
Pendexter & Farley, for teaming	94 00	
Zephirin Roux, for teaming	6 00	
Patrick H. Scanlon, for teaming	1 00	
John A. Simpson, for teaming	187 00	
O. A. Simpson, for teaming	167 64	
Rubert Strobel, for teaming	73 00	
Redmond Welch, for manure and teaming	202 50	
P. Watson, for manure	4 50	
D. S. Wood, for teaming	16 00	
		7,969 52
Total expenditure for the year 1890		$15,159 23

PAWTUCKET BOULEVARD.

Balance undrawn Jan. 1, 1890	$ 7,634 38	
Appropriation	18,000 00	
		$25,634 38

RECEIPTS.

Received into the treasury on account of PAWTUCKET BOULEVARD:		
From Michael McGrath, for overdraft	$1 75	
		1 75
		$25,636 13

EXPENDITURES.

Paid for SUNDRIES:		
To Sundry persons, for labor as per payrolls	$9,349 70	
Appropriation for Roads and Bridges, for services of Engineer, stakes, labor, teaming, etc.	589 95	
Appropriation for Reserved Fund, for services of Engineer's assistants	159 75	
Appropriation for Water Works, for pipe, fittings, lumber, etc.	34 47	
George L. Goodale, for land	1,350 00	
Amount carried forward	$11,483 87	

Amount brought forward		$11,483 87
Paid for SUNDRIES:		
To Edward S. Howe, for land	657 00	
Thomas J. Underwood, for land	554 00	
Burnham, Forrest & Davis, for lumber	37 16	
Mark Holmes, Jr., and Son, for lumber	50	
Amasa Pratt & Co., for lumber	30 09	
Charles E. Adams, for hardware	2 00	
Ames Plough Company, for scrapers,	82 50	
Bartlett & Dow, for hardware	60 44	
Bontwell Bros., for iron	4 59	
J. C. Bennett, for hardware	75	
Clarence G. Coburn, for shovels and potato diggers	43 33	
H. B. Shattuck, for shovels, rakes, picks, etc	27 17	
Frederick Taylor Co., for axe, hoes, shovels, padlock, etc	14 77	
W. A. Mack & Co., for pails and dippers	2 10	
O. A. Richardson, for repairing tape measure	1 00	
J. W. Bennett & Co., for tarred paper	1 73	
C. B. Coburn & Co., for twine	1 80	
John Lennon, for barrel	1 25	
Joseph Miller, for oat meal	23 25	
Quinlan & Washburn, for rubber cover	3 50	
Joseph Wilson, for gravel and teaming	228 93	
H. W. Tarbell, for trees	70 00	
George E. Evans, for car-fare, repairing tape, etc	2 55	
F. E. Rollins, for typewriting	5 61	
Boston & Maine Railroad, Lowell System, for transportation	1 70	
Felix Albert, for teaming	138 00	
Joseph Arsenault, for teaming	35 00	
A. H. Blake, for teaming	347 00	
B. M. Blake, for teaming	176 00	
Jacques Boisvert, for teaming	619 00	
Amount carried forward		$14,656 59

Amount brought forward	$14,656 59	
Paid for SUNDRIES:		
To E. Bibeault, for teaming	109 00	
B. G. Brown, for teaming	1,272 00	
J. F. Chandler, for teaming	311 00	
Edward Cawley, for teaming	30 00	
Charles Clapp, for teaming	331 00	
Peter S. Coburn, for teaming	57 75	
D. Corrier, for teaming	12 00	
E. Duren, for teaming	614 00	
William P. Foye, for teaming	243 00	
J. P. Fowler, for teaming	280 00	
A. H. Falls, for teaming	323 00	
George F. Falls, for teaming	325 00	
Louis Frappier, for teaming	63 00	
Clement Gaudette, for teaming	36 00	
R. M. Hills, for teaming	8 00	
E. S. Howe, for teaming	425 00	
Charles H. Hanson, for teaming	1,911 50	
Roger Hayes, for teaming	30 00	
Peter Latour, for teaming	384 00	
John Labarge, for teaming	4 00	
D. H. Laporte, for teaming	33 00	
Enoch Mills, for teaming	515 00	
Pendexter & Farley, for teaming	398 00	
Zephirin Roux, for teaming	408 00	
Bernard Riley, for teaming	681 00	
John A. Simpson, for teaming	490 00	
O. A. Simpson, for teaming	64 00	
R. D. Snow, for teaming	509 00	
F. E. Stowell, Superintendent, for teaming	18 00	
C. G. Thurston, for teaming	25 00	
Thomas J. Underwood, for teaming,	135 00	
Redmond Welch, for teaming	180 00	
C. H. Whitney, for teaming	613 00	
D. J. Williams, for teaming	69 00	
Total expenditure for the year 1890		$25,563 84
Balance undrawn, Dec. 31, 1890		72 29
		$25,636 13

PRINTING AND ADVERTISING.

Appropriated and assessed in 1890. ...	$8,000 00	
		$8,000 00

EXPENDITURES.

Paid for SUNDRIES:

To Butterfield Printing and Binding Co., for printing.....	$ 133 25
Boston Daily Advertiser, for advertising	30 75
Campbell & Hanscom, for printing and advertising...	377 88
Citizen Newspaper Co., for printing and advertising.....	899 50
Critic Publishing Co., for advertising,	11 75
Chase Bros., for printing.....	20 00
Daily News Co., for printing and advertising	484 85
B. C. Gagnon & Co., for advertising,	12 13
Harrington Bros., for printing.....	140 90
F. E. Johnson, for printing.....	160 65
Lepine & Co., for advertising.....	6 50
Lowell Sun, for advertising.....	12 25
Morning Mail Co., for printing and advertising	1,700 88
Marden & Rowell, for printing and advertising	637 36
Post Publishing Co., for advertising,	30 75
Vox Populi Press, for printing....	1,803 80
John Carter & Co., for paper.....	211 32
Amount carried forward	$6,674 52

Amount brought forward.....	$6,674 52	
Paid for SUNDRIES:		
To Carter, Rice & Co., for paper.....	64 68	
A. V. Partridge, for posting.....	137 76	
Thomas Kerwin, for teaming.....	50	
D. Lyons, for teaming.....	50	
F. S. Ladd, for teaming.....	50	
G. H. McNabb, for teaming.....	1 00	
Frank Meehan, for teaming.....	5 00	
James McLean, for teaming.....	50	
George E. Stanley, for transportation	5 20	
Total expenditure for the year 1890.....		$6,890 16
Transferred to Appropriation for Lighting.....		1,109 84
		$8,000 00

LIGHTING.

Appropriated and assessed in 1890.....	$55,000 00	
		$55,000 00

RECEIPTS.

Received into the treasury on account of LIGHTING:		
From Appropriation for Water Works, for frame and globe.....	$ 3 00	
Daniel Gage, for lamp-posts.....	30 00	
Lowell Gas Light Co., for lantern,	3 50	
		36 50
		$55,036 50

TRANSFERS.

From Appropriation for Printing.....	$1,109 84	
Appropriation for Library.....	140 54	
		1,250 38
		$56,286 88

EXPENDITURES.

Paid for LIGHTING PUBLIC BUILDINGS:		
To Lowell Gas Light Co.....	$1,286 78	
Lowell Electric Light Corporation..	587 43	
		$1,874 21
Amount carried forward		$1,874 21

Amount brought forward		$1,874 21
Paid for LIGHTING STREETS:		
To Sundry persons for labor, as per pay-rolls	$ 6,531 70	
Appropriation for Schools, for fuel	11 83	
Appropriation for Roads and Bridges, for labor and material	63 88	
Appropriation for Public Buildings, for labor and material	11 28	
Appropriation for Water Works, for water	18 32	
New England Telephone and Telegraph Co., for service	29 17	
Globe Gas Light Co., for lights and repairing torches	7,933 32	
Lowell Gas Light Co., for gas	9,243 37	
Lowell Electric Light Corporation, for lights	28,978 60	
Lowell Electric Light Corporation, for changing arc light at Tower's Corner	5 50	
Burnham, Forrest & Davis, for lumber	1 15	
Amasa Pratt & Co., for lamp-posts	20 00	
Charles E. Adams, for globes and hardware	111 57	
Pevey Bros., for lamp-posts	306 27	
H. B. Shattuck, for hardware	3 15	
Frederick Taylor Co., for hardware,	9 00	
H. R. Barker Manufacturing Co., for pipe, fittings, and labor	215 30	
A. I. Laughton, for lead, copper, solder, and labor	323 71	
H. H. Wilder & Co., for lead, solder, repairing lantern-frames, etc	51 10	
H. F. Ebert, for repairing harnesses,	3 60	
Fay Bros. & Hosford, for repairing sleigh, wagon, etc	29 21	
C. C. Thompson, for shoeing horse, etc.	19 70	
A. W. Baker, for veterinary dentistry	2 00	
C. H. Hanson, for medicine, oats, etc.,	10 00	
William E. Livingston, for coal, shorts, oats, etc	63 96	
Amounts carried forward	$53,996 69	$1,874 21

Amounts brought forward.....	$53,996 69	$1,874 21
Paid for LIGHTING STREETS:		
To T. J. McDonald, for hay and straw,	51 98	
O'Heir & Marin, for hay.....	11 23	
E. A. & A. T. Smith, for concrete..	13 05	
C. B. Coburn & Co., for waste, glass, diamond, brushes, etc.....	250 95	
Lawrence Manufacturing Co., for waste.....	16 05	
Simpson & Rowland, for matches..	15 00	
H. C. Church & Son, for stationery,	39 70	
F. E. Rollins, for typewriting.....	1 12	
A. D. Carter, for expenses of committee	16 90	
		54,412 67
Total expenditure for the year 1890....		$56,286 88

PUBLIC BUILDINGS.

Appropriated and assessed in 1890.....	$15,000 00	
		$15,000 00

RECEIPTS.

Received into the treasury on account of PUBLIC BUILDINGS:

From Appropriation for Schools, for labor and material.....	$ 40 47	
Appropriation for School-houses, for labor and material.....	625 10	
Appropriation for Roads and Bridges, for labor and material	7 01	
Appropriation for Reserved Fund, for labor and material.....	711 47	
Appropriation for Paupers, for coffins	435 25	
Appropriation for Police, for labor and material.....	40 20	
Appropriation for Fire Department, for labor and material,	25 01	
Appropriation for Commons, for labor and material.....	77 08	
Appropriation for Lighting, for labor and material	15 60	
Appropriation for Health, for labor and material.....	2 17	
Appropriation for Extension of Palmer Street, for labor.....	4 75	
Amounts carried forward	$1,984 11	$15,000 00

Amounts brought forward	$1,984 11	$15,000 00
Received into the treasury on account of PUBLIC BUILDINGS:		
From Appropriation for City Hall and Memorial Building, for labor,	51 13	
J. W. Bennett, for old building on Middle Street	40 00	
William H. Penn, for old engine-house on Lincoln Street	70 00	
George P. Woodward, for cash received from sales of old material	32 00	
Boutwell Bros., for rent of land, rear City Hall	25 00	
James Leonard, for rent of land rear Race Street engine-house,	4 00	
A. L. Brooks & Co., for overdraft,	20	
J. V. Keyes, for overdraft	4 69	
Lowell Institution for Savings, on loan	6,250 00	
Lowell Institution for Savings, on loan	1,500 00	
		9,961 13
		$24,961 13
Transferred from Appropriation for Library		552 81
		$25,513 94

EXPENDITURES.

Paid SUPERINTENDENT OF PUBLIC BUILDINGS:		
To George T. Woodward, Superintendent, salary	$1,500 00	
		$1,500 00
Paid Sundry persons for labor as per pay-rolls	$4,305 26	
		4,305 26
Amount carried forward		$5,805 26

Amount brought forward		$5,805 26

Paid for ENGINE-HOUSE ON PALMER STREET:

To Sundry persons, for labor as per pay-rolls	$422 48	
A. P. Bateman, for lumber	7 10	
C. P. Conant, for moulding	1 12	
S. W. Fletcher, for doors	8 00	
Howe Brothers Co., for lumber	60 32	
William Kelley & Son, for doors	9 00	
Andrews & Wheeler, for marble and labor	18 98	
S. D. Butterworth, for mason work and material	36 99	
Howard & Wilson, for brick, lime, and sand	5 30	
Cole & Nichols, for castings	17 43	
W. A. Mack & Co., for galvanized iron, tin, labor, etc	69 20	
Scannell & Wholey, for iron and labor	200 27	
C. B. Coburn & Co., for paint, ink, bronze, etc	12 13	
James Leach, for teaming	50	
		*868 82

Paid for CARPENTER SHOP:

To Sundry persons, for labor as per pay-rolls:	$ 18 68	
John F. Murphy, for mason work	120 20	
J. B. Varnum, for irons	1 67	
Rice & Co., for wire screening	5 10	
		†145 65
Amount carried forward		$6,819 73

* To this amount add the sum of $56,229.97 expended in 1888 and 1889, making the total cost of building $57,098.79.

† To this amount add the sum of $8,958.78 expended in 1889, making the total cost of building $9,104.43.

Amount brought forward		$6,819 73
Paid for HOSE TOWER ON RACE STREET ENGINE-HOUSE:		
To Sundry persons, for labor as per payrolls	$ 95 00	
Appropriation for Water Works, for water	1 02	
P. V. Allen, for foundation, per contract	200 10	
Patrick Corcoran, for brick work, per contract	699 00	
J. W. Bennett & Co., for roofing	25 64	
Robert Goulding, for slate, zinc, and labor	23 55	
A. P. Bateman, for windows	8 52	
Davis & Sargent, for lumber	23 54	
Mark Holmes, Jr., & Son, for lumber and labor	9 85	
O. E. Averill, for blacksmithing	7 10	
Joel Knapp & Son, for bolts and washers	4 32	
W. A. Mack, for copper, iron, and labor	38 70	
H. B. Shattuck, for hardware	16	
Frederick Taylor Co., for hardware,	1 49	
Staples Bros., for pipe	3 15	
E. A. & A. T. Smith, for concrete	13 60	
		1,154 74
Paid for ENGINE-HOUSE ON LINCOLN STREET:		
To Sundry persons, for labor as per payrolls	$ 345 53	
Appropriation for School-houses, for hardware, paint, and lumber	84 36	
Appropriation for Roads and Bridges, for stone and labor	52 40	
Appropriation for Water Works, for pipe and labor	12 60	
Merrill & Cutler, for plans and specifications	132 51	
Amounts carried forward	$627 40	$7,974 47

Amounts brought forward	$627 40	$7,974 47
Paid for ENGINE-HOUSE ON LINCOLN STREET:		
To J. Boisvert, for mason work, per contract	583 00	
J. Boisvert, for mason work	85 60	
Robert Goulding, for slating, per contract	236 00	
William H. Wiggin, for contract carpenter work	2,776 70	
S. H. Jones, for heating, per contract	381 00	
S. H. Jones, for pipe, fittings, and labor	49 81	
A. L. Brooks & Co., for window bands	24	
A. P. Bateman, for lumber	8 68	
Howe Bros. & Co., for lumber	13 47	
Charles E. Adams, for sand paper, stall-guards, wire brads, etc.	13 55	
Bartlett & Dow, for screws	58	
H. B. Shattuck, for hardware	1 34	
Frederick Taylor Co., for bolts	50	
O. E. Averill, for blacksmithing	7 25	
H. R. Barker Manufacturing Co., for fittings and labor	57 46	
F. H. Derby, for automatic burners,	15 00	
W. A. Mack & Co., for galvanized iron, labor, solder, tin, etc.	52 44	
Rice & Co., for stall and window guards	18 76	
Chicago Varnish Co., for varnish	15 00	
C. B. Coburn & Co., for glass, paint, potash, etc.	3 24	
George L. Fowler, for raising and moving building	35 00	
W. H. Fuller, for labor	8 50	
James Smith, for sand, cement, lime, brick, and labor	27 60	
Staples Bros., for drain pipe and labor	285 45	
E. A. & A. T. Smith, for concrete	193 25	
Calvin Webster, for labor	3 50	
Alphonzo Merrill, for teaming	75	
Amounts carried forward	$5,501 07	$7,974 47

Amounts brought forward	$5,501 07	$7,974 47
Paid for ENGINE-HOUSE ON LINCOLN STREET:		
To William Roberts, for teaming.....	3 00	
Lovejoy-Paul Express Co., for transportation.....	35	
		$5,504 42
Paid for STABLE FOR POLICE DEPARTMENT:		
To Sundry persons, for labor as per payrolls.....	$ 340 80	
Fred C. Miller, for plans and specifications.....	100 00	
George T. Woodward, traveling expenses.....	2 70	
Frederick Frye, for brick work, per contract.....	1,516 50	
Frederick Frye, for mason work and material.....	50 00	
Charles Runels, for granite trimmings, per contract.....	478 40	
Charles Runels, for labor.....	5 13	
John A. Simpson, for foundation, per contract.....	258 00	
William H. Wiggin, for carpenter work, per contract.....	2,360 50	
A. L. Brooks & Co., for lumber....	17 14	
A. P. Bateman, for lumber.....	3 07	
William Kelley & Son, for doors and sash.....	3 55	
Amasa Pratt & Co., for lumber....	3 37	
Sturtevant & Galer, for blocks.....	64	
J. C. Bennett, for hardware.....	1 04	
H. B. Shattuck, for hardware.....	6 78	
Frederick Taylor Co., for hardware, twine, etc.....	2 60	
O. E. Averill, for labor.....	3 25	
H. R. Barker Manufacturing Co., for steam fittings.....	198 10	
Frank H. Derby, for automatic burners.....	20 00	
Amounts carried forward	$5,371 57	$13,478 89

Amounts brought forward	$5,371 57	$13,478 89
Paid for STABLE FOR POLICE DEPARTMENT:		
To Richard Dobbins, for castings	1 90	
S. H. Jones, for pipe, fittings, and labor	6 94	
Joel Knapp & Son, for labor	50	
W. A. Mack & Co., for cord, pulleys, galvanized iron, and labor	58 90	
Rice & Co., for wire cloth	44 50	
H. H. Wilder & Co., for oakum, lead, pipe, labor, etc	254 81	
C. B. Coburn & Co., for paint, oil, sand paper, etc	5 88	
Coburn & Crosby, for plastering	14 00	
Conners Bros., for sand	1 25	
William E. Livingston, for cement,	3 50	
E. A. & A. T. Smith, for concrete	97 70	
Staples Bros., for brick	9 50	
Daniel McCarthy, for teaming	75	
Alphonzo Merrill, for teaming	18 00	
William Roberts, for teaming	50	
		5,890 20
Paid for LUMBER, HARDWARE, ETC.:		
To Otis Allen & Son, for lumber and pickets	$ 54 56	
A. B. Adams, for chestnut posts	137 36	
A. P. Bateman, for lumber	133 69	
A. L. Brooks & Co., for lumber	393 39	
Burnham, Forrest & Davis, for lumber	170 45	
J. E. Conant & Co., for lumber	6 00	
Davis & Sargent, for lumber	92 33	
Howe Bros. & Co., for lumber	184 51	
Mark Holmes, Jr., & Son, for ladder rounds	1 75	
William Kelley & Son, for lumber and labor	17 89	
Amasa Pratt & Co., for lumber	129 10	
Charles E. Adams, for hardware	409 22	
Amounts carried forward	$1,730 25	$19,369 09

Amounts brought forward	$1,730 25		$19,369 09
Paid for LUMBER, HARDWARE, ETC.:			
To J. C. Bennett, for hardware	8 12		
Bartlett & Dow, for hardware	2 10		
Boutwell Bros., for steel	42		
F. W. Cheney, for pails	70		
J. D. Jewett, for hardware	35 30		
A. F. Nichols, for castings	8 31		
Horace B. Shattuck, for hardware	73 48		
Frederick Taylor Co., for hardware,	54 80		
Woodrough & Clements, for saws	7 00		
			1,920 48
Paid for SUNDRIES:			
To Appropriation for Roads and Bridges, for services of Engineer's assistants, etc	$ 38 25		
Appropriation for Roads and Bridges, for sidewalk assessment	39 54		
Appropriation for Paupers, for coffin	5 00		
Appropriation for Sewers and Drains, for sewer assessment, Fayette Street	23 43		
Appropriation for Water Works, for water	10 04		
Lowell Electric Light Corporation, for power	63 88		
New England Telephone and Telegraph Co., for service	43 00		
Western Union Telegraph Co., for service	75		
O. E. Averill, for blacksmithing	14 71		
H. R. Barker Manufacturing Co., for pipe, fittings, and labor	246 75		
W. W. Carey, for machinery	539 59		
Cole & Nichols, for castings	17 54		
Richard Dobbins, for castings and inspecting boilers	8 14		
Farrell & Conaton, for solder and labor	5 68		
Amounts carried forward	$1,056 30		$21,289 57

Amounts brought forward	$1,056 30	$21,289 57
Paid for SUNDRIES:		
To John Gilchrist, for pipe, fittings, and labor	249 32	
L. G. Hall & Co., for wire and labor,	1 00	
S. H. Jones, for pipe and fittings	116 01	
Joel Knapp & Son, for washers, bolt, and nuts	4 18	
W. A. Mack & Co., for tin, iron, and labor	22 91	
Rice & Co., for wire cloth	11 76	
Thomson-Houston Motor Co., for motor	706 00	
Charles I. Taylor & Co., for altar in Edson Cemetery Chapel	8 00	
H. H. Wilder & Co., for labor, pipe, couplings, etc	95 46	
T. M. Bolton & Co., for whip and repairing harness	1 35	
Dyar & Patterson, for horse-cover, blanket, and whip	9 50	
H. F. Ebert, for snap, whip, and repairing harness	39 95	
C. H. Hanson, for carriage mat	65	
M. V. B. Libbey, for horse-shoeing,	35 95	
A. Parsons, for blacksmithing	4 35	
Shufelt & McCoy, for repairing carriage	74 09	
T. D. Bailey, for mason-work and material	17 14	
J. W. Bennett & Co., for roofing	28 06	
Conners Bros., for brick and teaming,	44 30	
Coburn & Crosby, for mason-work and material	19 64	
C. J. Cheney, Jr., for drain-pipe and traps	24 81	
W. H. Fuller, for foundation of Pauper Department stable, as per contract	44 00	
Howard & Wilson, for lime, sand, brick, and cement	31 95	
William E. Livingston, for hay, lime, cement, brick, and coal	183 19	
Amounts carried forward	$2,829 87	$21,289 57

Amounts brought forward	$2,829 87	$21,289 57
Paid for SUNDRIES:		
To D. M. Prescott, for mason-work and material	46 94	
Staples Bros., for brick and drain-pipe	32 38	
Sweatt & Davis, for stone.....	1 25	
E. A. & A. T. Smith, for concrete..	13 80	
Joseph Miller, for oats, corn, and hay,	5 19	
O. D. Wilder, for grain.....	14 43	
Josiah Gates & Sons, for leather....	81	
J. V. Keyes, for cloth and trimmings.....	28 60	
A. L. Kittredge, for shades and fixtures	3 50	
William L. Lockhart, for coffin trimmings	103 95	
J. F. Puffer & Son, for mirror	3 50	
Whiting & Weston, for belting and labor	52 88	
G. A. Andrews, agent, for carlo cresol,	2 00	
Carleton & Hovey, for sponge.....	25	
C. B. Coburn & Co., for paint, brushes, glass, etc.....	369 80	
C. J. H. Judkins, for pearline.....	28	
A. L. Ready, for waste.....	70	
W. H. Spalding & Co., for lead, oil, paint, glass, brushes, etc.....	110 35	
Robert Wood, for professional services.....	2 50	
H. C. Church & Son, for blank books and seals.....	10 93	
Palliser, Palliser & Co., for contracts,	4 00	
E. J. Soltman, for estimate blanks..	1 20	
George T. Woodward, for postage-stamps, expenses of committee, etc	6 21	
A. J. Derby, for refreshments.....	8 10	
C. W. W. Richardson, for refreshments.....	5 80	
Thomas Nesmith, for rent of land on Middle Street.....	145 83	
C. H. Hanson, for horses, harnesses, use of horse, etc.....	315 00	
Morse & Sparks, for carriage hire..	32 00	
Amounts carried forward	$4,152 05	$21,289 57

Amounts brought forward.....	$4,152 05		$21,289 57
Paid for SUNDRIES:			
To Charles Clapp, for teaming.....	41 50		
Timothy Kelly, for teaming.....	50		
D. P. Knowlton, for teaming.....	1 00		
James Leach, for teaming.....	1 00		
Daniel McCarthy, for teaming.....	6 00		
D. Mosher, for teaming.....	1 00		
James Nixon, for teaming.....	50		
William Roberts, for teaming.....	10 75		
P. H. Scanlon, for teaming.....	1 50		
G. E. Stanley, for transportation...	4 52		
American Express Co., for transportation.....	1 55		
Lovejoy-Paul Express Co., for transportation.....	1 50		
New York and Boston Despatch Express Co., for transportation...	25		
Boston & Maine Railroad, Lowell System, for transportation....	75		
			4,224 37
Total expenditure for the year 1890....			$25,513 94

CITY HALL BUILDING LOT.

Balance undrawn, Jan. 1, 1890.....	$15,042 49	
		$15,042 49
RECEIPTS.		
Received into the treasury on account of CITY HALL BUILDING LOT:		
From Briscoe W. Root, for rent.....	$ 42 00	42 00
		$15,084 49
Transferred to Appropriation for City Hall and Memorial Building.....	$15,084 49	$15,084 49

CITY HALL AND MEMORIAL BUILDING.

Balance undrawn, Jan. 1, 1890.....	$26,453 30	$26,453 30

RECEIPTS.

Received into the treasury on account of CITY HALL AND MEMORIAL BUILDING:		
From Barnard & Stanwood, for bonds dated Oct. 1, 1890.....	$95,000 00	95,000 00
Transferred from Appropriation for City Hall Building Lot.....	$15,084 49	15,084 49
		$136,537 79

EXPENDITURES.

Paid on account of CITY HALL:		
To Appropriation for Roads and Bridges, for services of City Engineer and assistants.....	$157 25	
Appropriation for Reserved Fund, for services of City Engineer's assistants	28 85	
Amount carried forward	$186 10	

Amount brought forward.....		$186 10	
Paid on account of CITY HALL:			
To Appropriation for Public Buildings, for labor and material.....		24 38	
Appropriation for Water Works, for pipe, fittings, and labor.....		67 15	
Merrill & Cutler, for plans, specifications, and services in superintending construction of building.....		7,109 67	
Builders' Iron Foundry, on account of contract for iron work.....		3,510 00	
Cape Ann Granite Co., on account of contract for stone.....		5,592 60	
C. F. Foss & Co., on account of contract for mason work.....		11,421 00	
C. F. Foss & Co., for extra labor and material.....		121 86	
P. O'Hearn, on account of contract for foundation.....		11,270 00	
P. O'Hearn, for extra masonry and excavation on foundation.....		251 58	
William H. Wiggin, on account of contract for carpenter work....		855 00	
Daniel Cushing, for copper box placed in corner-stone.....		6 75	
Farrell & Conaton, for pipe, lead, oakum, and labor.....		39 14	
Harry Raynes, for silver trowel....		30 00	
Butterfield Printing and Binding Co., for printing.....		2 00	
			40,487 23
Paid on account of MEMORIAL BUILDING:			
To Appropriation for Roads and Bridges, for services of City Engineer and assistants	$128 75		
Appropriation for Reserved Fund, for services of City Engineer's assistants	18 63		
Amounts carried forward.....	$147 38		$40,487 23

Amounts brought forward.....	$147 38	$40,487 23
Paid on account of MEMORIAL BUILDING:		
To Appropriation for Public Buildings, for labor.....	6 50	
Appropriation for Water Works, for pipe, fittings, and labor.....	66 04	
Fred W. Stickney, for plans, specifications, and services in superintending construction of building.....	2,900 00	
Chelmsford Foundry Co., on account of contract for iron work.....	3,000 00	
C. F. Foss & Co., on account of contract for mason work.....	11,894 60	
C. F. Foss & Co., for extra labor and material	273 14	
Luther F. Kittredge, on account of contract for foundation.....	6,500 00	
Luther F. Kittredge, for extra labor and material.....	197 75	
Maine & New Hampshire Granite Co., on account of contract for stone	5,000 00	
J. B. Varnum, on account of contract for carpenter work.. ...	600 00	
J. B. Varnum, for extra labor and material	13 36	
Lewis D. Gumb, for marble slab....	2 00	
W. A. Mack & Co., for copper box and labor.....	4 50	
Harry Raynes, for silver trowel....	30 00	
C. B. Coburn & Co., for paint and brushes	92	
		30,636 19
Paid for SUNDRIES:		
To Appropriation for Roads and Bridges, for labor.....	$29 00	
Appropriation for Public Buildings, for labor and material.....	20 25	
Amounts carried forward.....	$49 25	$71,123 42

Amounts brought forward	$49 25	$71,123 42

Paid for SUNDRIES:

To C. F. Foss & Co., for labor and material	66 81	
J. B. Varnum, for labor and material	82 77	
Henry Hoole, for traveling expenses	7 50	
Bacheller, Dumas & Co., for printing and binding specifications	27 10	
Citizen Newspaper Co., for advertising	13 37	
Campbell & Hanscom, for advertising	22 25	
Critic Publishing Co., for advertising	1 50	
Daily News Co., for advertising	16 00	
Lowell Sun, for advertising	5 50	
Marden & Rowell, for advertising	15 75	
Morning Mail Co., for printing and advertising	45 15	
Morning Mail Co., for printing and binding specifications	247 50	
Vox Populi Press, for printing	61 60	
Vox Populi Press, for printing and binding specifications	434 75	
F. E. Rollins, for typewriting	5 00	
American Brass Band, for services at laying of corner-stone	63 00	
Allen's Cornet Band, for services at laying of corner-stone	35 00	
G. A. R. Fife, Drum, and Bugle corps, for services at laying of corner-stone	42 00	
North Billerica Band, for services at laying of corner-stone	35 00	
Post 120 G. A. R. Band, for services at laying of corner-stone	57 50	
American Quartette, for services at laying of corner-stone	15 00	
Sarah H. Cahill, for badges	7 50	
C. A. R. Dimon, for stamps, badges, carriage hire, etc	4 23	
Amounts carried forward	$1,361 03	$71,123 42

Amounts brought forward.....	$1,361 03	$71,123 42
Paid for SUNDRIES:		
To C. H. Kimball, for leggings, chapeaux, batons, etc.....	79 00	
Morse & Sparks, for carriage hire..	10 10	
		*1,450 13
Total expenditure for the year 1890....		†$72,573 55
Balance undrawn Dec. 31, 1890.....		63,964 24
		$136,537 79

* This amount was expended in common for both buildings.

† To this amount add $3,546.70 expended in 1889, making total cost of City Hall and Memorial Building to Dec. 31, 1890, $76,120.25.

CITY LIBRARY.

Appropriated and assessed in 1890.....	$13,000 00	
		$13,000 00

RECEIPTS.

Received into the treasury on account of CITY LIBRARY:		
From Charles H. Burbank, for fines, fees, etc.....	$ 401 30	
County of Middlesex, on account of dog tax of 1889.....	3,380 10	
		3,781 40
		$16,781 40

EXPENDITURES.

Paid for LIBRARIAN AND ASSISTANTS:		
To Charles H. Burbank, for services as Librarian	$1,500 00	
Sundry persons, for labor as per payrolls	4,907 54	
		$6,407 54
Amount carried forward		$6,407 54

Amount brought forward.....		$6,407 54
Paid for BOOKS AND PERIODICALS:		
To D. Appleton & Co.....	$ 6 00	
American Journal of Psychology...	15 00	
D. Brenton.....	6 00	
Charles H. Burbank.....	64 26	
N. J. Bartlett & Co.....	34 00	
Mrs. M. A. Bailey.....	3 40	
Balch Bros.....	30 00	
F. P. Coggeshall.....	20 00	
W. B. Clarke & Co.....	2,045 70	
William Cushing.....	5 00	
John P. Dale & Co.....	46 20	
Azra M. Dows.....	8 34	
Estes & Lauriat.....	52 00	
Harriet F. Hill.....	28 66	
Hancock, New Hampshire, History Association	4 45	
S. L. Lane.....	10 00	
La Societe de Publications Francaises des Etats Unis.....	1 00	
Library Bureau.....	4 00	
George E. Littlefield.....	129 77	
Charles F. Libbie & Co.....	199 69	
Morning Mail Co.....	7 00	
L. A. Morrison.....	1 75	
Henry C. Nash, Manager.....	6 00	
New York Mfg. Co.....	6 00	
New England Historic Genealogical Society	3 00	
Office of Publishers' Weekly.....	11 00	
James Pott & Co.....	4 50	
G. C. Prince & Son.....	1,313 35	
B. B. Russell.....	4 00	
Soldiers' and Sailors' Historical Society of Rhode Island.....	1 60	
J. M. Stoddart & Co.....	6 00	
E. Senecal & Fils.....	5 00	
Carl Schoenhorf.....	20 25	
Ticknor & Co.....	4 00	
B. Thurston & Co.....	5 00	
The Prince Society.....	15 00	
Amounts carried forward.....	$4,126 92	$6,407 54

Amounts brought forward	$4,126 92	$6,407 54
Paid for BOOKS AND PERIODICALS:		
To The Franklin Institute of the State of Pennsylvania	5 00	
The Boston Book Co	4 00	
G. H. Wilson	4 00	
Book Mart Publishing Co	1 50	
Campbell & Hanscom	6 00	
Citizen Newspaper Co	5 00	
J. H. Hickcox	5 00	
Lowell Sun	12 00	
L'Etoile	1 00	
Benjamin Lenthier	2 00	
Lowell Daily Courier	6 00	
Morning Mail Co	7 50	
Sampson, Murdock & Co	9 00	
Studies in Historical and Political Science	3 00	
		$4,197 92
Paid for SUNDRIES:		
To Lowell Gas Light Co., for gas	$ 511 06	
Lowell Electric Light Corporation, for lights	726 67	
New England Telephone and Telegraph Co., for service	52 00	
C. H. Burbank, for expressing, postage, etc	55 89	
Harriet F. Hill, for pens, needles, postage, etc	56 23	
W. H. Gilman, for laundering towels,	3 28	
William B. Goodwin, for services as clerk	10 50	
Badger & Kimball, for lumber and labor	3 50	
G. W. Bagley, for lumber and labor,	9 64	
H. B. Shattuck, for typewriter ribbon, repairing typewriter, etc.	8 64	
Frederick Taylor Co., for hardware,	1 00	
H. R. Barker Manufactering Co, for labor and material	3 90	
Amounts carried forward	$1,442 31	$10,605 46

Amounts brought forward	$1,442 31	$10,605 46
Paid for SUNDRIES:		
To W. A. Mack & Co., for shades	75	
H. H. Wilder & Co., for tongs, dipper, ice basket, water cooler, etc.,	9 90	
Clinton L. Bruce, for paper, tracing cloth, etc	22 20	
C. B. Coburn & Co., for glue, sponge, duster, brushes, etc	24 77	
Daniel Gage, for ice	56 43	
W. H. Spalding & Co., for paste	1 20	
Sherman & Manning, for repairing stool	1 80	
Bacheller, Dumas & Co., for binding and repairing books	487 77	
H. C. Church & Son, for ink and paper	6 25	
N. L. Chamberlin & Co., for type	3 53	
F. P. Coggeshall, for blank books and stationery	3 55	
Citizen Newspaper Co., for printing,	350 00	
J. M. Fellows, for stamp	75	
Morning Mail Co., for paper, envelopes, postal cards, etc	81 75	
Merrimack Rubber Co., for tubing,	1 56	
Taylor Bros., for stationery	1 10	
N. W. Norcross & Son, for insurance	345 97	
Edson Block, for rent	960 00	
Trustees A. H. Hosford, for rent, water, and heating	1,412 00	
Stanton & Thurston, for watering street	6 50	
		5,220 09
Total expenditure, for the year 1890		$15,825 55
TRANSFERS.		
To Appropriation for Commons	$262 50	
Appropriation for Lighting	140 54	
Appropriation for Public Buildings,	552 81	
		955 85
		$16,781 40

HEALTH.

Appropriated and assessed in 1890.....	$25,000 00	
		$25,000 00

RECEIPTS.

Received into the treasury on account of HEALTH:		
From F. A. Bates, for sales of offal, manure, and horse.....	$3,166 00	
Commissioners of Sinking Funds, on loan.....	3,500 00	
		6,666 00
		$31,666 00

EXPENDITURES.

Paid BOARD OF HEALTH:		
To James B. Field, salary.....	$600 00	
Charles R. Costello, salary.....	600 00	
		$ 1,200 00
Paid Sundry persons, for labor, as per pay-rolls	$22,053 44	
		22,053 44
Amount carried forward		$23,253 44

Amount brought forward		$23,253 44
Paid for HAY, GRAIN, ETC.:		
To C. H. Hanson, for hay and straw	$498 48	
C. H. Hanson & Co., for hay	253 41	
George Kelley, for hay	136 05	
William E. Livingston, for oats, corn, meal, etc	98 38	
T. J. McDonald, for oats, corn, meal, etc	330 90	
Orrin B. Ranlett, for hay	254 52	
A. G. Stiles & Co., for oats, corn, middlings, etc	412 91	
E. S. Sherman & Co., for salt, corn, meal, and shorts	29 87	
E. N. Wood & Co., for oats	334 31	
John C. Woodward, for hay	340 26	
		2,689 09
Paid for HORSES, CARRIAGES, HARNESSES, ETC.:		
To Appropriation for Roads and Bridges, for repairing carriages, shoeing horses, etc	$432 68	
C. H. Hanson & Co, for horse, blankets, shoeing horses, etc	260 10	
C. H. Hanson, difference between horses exchanged, wagon, collar, whips, etc	490 85	
A. M. Stevens, for horse	250 00	
T. M. Bolton, for harnesses, repairing harnesses, etc	227 50	
H. F. Ebert, for repairing harnesses, etc	143 75	
H. J. Draper, for painting carriages,	19 00	
Fay Bros. & Hosford, for wagon and repairing carriages	197 60	
J. H. Swett, for repairing carriages,	292 22	
Shufelt & McCoy, for repairing carriage	4 00	
		2,317 70
Amount carried forward		$28,260 23

Amount brought forward			$28,260 23
Paid for SUNDRIES:			
To Appropriation for Schools, for coal		85 6	
Appropriation for Paupers, for wood		7 00	
Appropriation for Police, for services of officers		104 50	
Appropriation for Public Buildings, for lumber and labor		2 17	
Appropriation for Water Works, for water		71 00	
Lowell Gas Light Co., for gas		62 81	
New England Telephone & Telegraph Co., for service		185 98	
Burnham, Forrest & Davis, for lumber		46 98	
Howe Bros. & Co., for lumber		4 80	
Charles E. Adams, for hardware		51 43	
Bartlett & Dow, for manger		1 25	
Boutwell Bros., for axles, wheels, chains, etc		160 99	
J. C. Bennett, for hardware and paint		12 65	
H. B. Shattuck, for hardware		50	
Frederick Taylor Co., for hardware,		27	
T. Costello & Co., grates, hose, pails, fumigators, etc		83 40	
Durant & Rogers, for badge		2 75	
Farrell & Conation, for labor and material		14 46	
W. A. Mack & Co., for gas stove		2 00	
Nason B. Parsons, for keys and filing saws		1 22	
Scannell & Wholey, for repairing urinal		15 45	
C. C. Thompson, for blacksmithing,		60 08	
C. Zimmer, for fitting keys		3 50	
John Cross, for canvas spreads		27 00	
John H. Cleary, for chairs and oil cloth		5 25	
French & Puffer, for brooms and lamps		5 70	
A. G. Pollard & Co., for crash and blankets		7 82	
Amounts carried forward		$949 52	$28,260 23

Amounts brought forward	$949 52	$28,260 23
Paid for SUNDRIES:		
To Quinlan & Washburn, for rubber boots and gloves	20 00	
Boston Chemical Co., for ozone	8 75	
Carleton & Hovey, for brushes, combs, ginger, etc	20 03	
C. B. Coburn & Co., for oil, brimstone, ammonia, etc	85 40	
Thomas H. Clough, for oil	3 00	
Ellingwood & Co., for vaccine points, elatol, disinfectant powder, etc.,	61 44	
Granite State Axle Oil Co., for oil	6 75	
Daniel Gage, for ice	14 30	
F. C. Goodale & Co., for peppermint bulbs	4 20	
C. H. Hanson & Co., for brushes, medicine, etc	17 90	
C. B. Merrill, for harness dressing	3 00	
F. E. McNabb, for medicine	4 68	
O. B. Ranlett, for soapine, matches, etc	8 70	
W. H. Spalding & Co., for glass, labor, etc	5 11	
Sutherland Liniment Co., for liniment	3 00	
White Mountain Axle Oil Co., for oil	6 60	
Edward Cawley, for coal	7 00	
James Cawley, for coal	15 00	
Cawley Bros., for coal	15 00	
Bacheller, Dumas & Co., for blank books	8 25	
H. C. Church, for pens, stationery, etc	1 75	
Campbell & Hanscom, for subscriptions	7 60	
F. P. Coggeshall, for blank books and stationery	49 70	
F. Blanche Hard, for typewriting	2 40	
Lowell Daily Courier, for subscription	6 00	
Merrimack Rubber Co., for rubber bands	2 30	
Amounts carried forward	$1,337 38	$28,260 23

Amounts brought forward	$1,337 38	$28,260 23
Paid for SUNDRIES:		
To J. Merrill & Son, for map and directories	4 25	
Morning Mail Co., for blank books, etc	11 00	
F. E. Rollins, for typewriting	19 00	
J. L. Severance, for stamp, ink, and pad	3 00	
F. W. Sherman, for insurance	31 24	
Samson Lime Pen Co., for pens	11 25	
The Engineering and Building Record, for subscription	4 00	
The Sanitary News Co., for subscription	2 00	
F. A. Bates, for postage, mileage-book, expenses of Board, etc.	117 50	
James B. Field, for expenses of Board of Health	96 45	
Thomas B. Hustwick, for washing towels	75	
Lowell & Dracut Street Railway, for transportation and entertainment of Massachusetts Association Boards of Health and Press,	56 00	
Massachusetts Association Boards of Health, for assessment	12 00	
J. W. Smith, for hygrometer	8 75	
F. E. Saunders, for temperature and barometer readings	126 66	
A. W. Baker, for veterinary dentistry	16 00	
W. G. Eaton, for professional services	1 50	
W. A. Johnson, for professional services	279 50	
E. W. Trueworthy, for professional services	5 00	
W. A. Sherman, for professional services	38 00	
J. H. Sparks, for professional services	4 00	
Robert Wood, for professional services	7 00	
Amounts carried forward	$2,192 23	$28,260 23

Amounts brought forward	$2,192 23	$28,260 23
Paid for SUNDRIES:		
To Jesse A. Viles, for professional services	9 00	
Lowell Hospital Association, for board and medical attendance of Mrs. John Tracy and Arthur S. Monroe	9 75	
George L. Fowler, for moving bath-house	257 75	
Emily Chitty, for labor	19 00	
Mary Smith, for labor	24 65	
Mrs. John Ward, for labor	90	
Irvine Block, for rent	100 03	
Middle-Street Block, for rent	299 97	
Proprietors of Locks & Canals, for rent	35 00	
Page & Nunn, for entertainment of visitors	24 00	
H. A. Wright, for pasturing horse	3 75	
C. H. Hanson & Co., for use of horse	28 67	
C. H. Hanson, for shoeing horses and use of horse	128 83	
Morse & Sparks, for carriage hire	45 85	
Boston & Maine Railroad, Lowell System, for transportation	25	
		3,179 63
Total expenditure for the year 1890		$31,439 86

TRANSFERS.

To Appropriation for Police	$ 117 29	
Appropriation for Commons	108 85	
		226 14
		$31,666 00

WATER WORKS.

Balance undrawn, Jan. 1, 1890.....	$956 41	$ 956 41

RECEIPTS.

Received into the treasury on account of WATER WORKS:		
From Sundry persons, for water, etc., in 1887.....	$ 3 90	
Sundry persons, for water, etc., in 1888..	465 60	
Sundry persons, for water, etc., in 1889.....	20,396 13	
Sundry persons, for water, etc., in 1890.....	173,098 17	
		193,963 80
		$194,920 21

EXPENDITURES.

Paid PRESIDENT AND SUPERINTENDENT:		
To Arnold S. Welch, President, salary,	$ 76 35	
John Stott, President, salary.....	323 65	
Millard F. Wright, Superintendent, salary.....	1,600 00	
		$2,000 00
Amount carried forward....		$2,000 00

Amount brought forward		$2,000 00
Paid Sundry persons for labor, as per pay-rolls	$30,575 31	
		30,575 31
Paid for INTEREST:		
To Sundry persons, on City of Lowell Water Bonds	$80,610 00	
City Institution for Savings, on notes,	3,250 00	
Lowell Institution for Savings, on notes	25,100 00	
Commissioners of Sinking Funds, on notes	52 50	
Blake Bros. & Co., on note	3,000 00	
		112,012 50
Paid on account of LOANS:		
To Appropriation for City Debt, for balance due on note dated Dec. 3, 1885	$3,000 00	
		3,000 00
Refunds on WATER RATES:		
To Sundry persons, on account of vacancies of 1889	$1,079 24	
Boott Cotton Mills	36 25	
James W. Bennett	1 01	
Estate of S. Langley	3 00	
Estate of J. A. Brabrook	10 20	
John Gildee	13 50	
John Howland	2 23	
Lowell Horse Railroad Co	170 79	
Robert Park	5 83	
Anna B. Sargent	5 00	
Wyman's Exchange	53 85	
William G. Ward	3 00	
		1,383 90
Amount carried forward		$148,971 71

Amount brought forward		$148,971 71
Paid for FUEL:		
To Bangs & Horton, for coal	$ 107 78	
D. W. Horne & Son, for coal	5,296 35	
William E. Livingston, for coal	3,879 05	
Whithed & Co., for coal	538 46	
C. H. Whitney, for teaming coal	9 50	
Buxton & Chapman, for wood	4 00	
E. Duren, for wood	18 00	
Daniel Gage, for wood	10 36	
J. R. Smith, for wood	8 00	
		9,871 50
Paid for PIPE, METERS, HYDRANTS, ETC.:		
To American Frost Meter Co., for meters	$ 632 00	
Builders' Iron Foundry, for pipe, fittings, etc	1,094 72	
Chapman Valve Manufacturing Co., for hydrants, valves, etc	2,475 58	
Chadwick Lead Works, for pipe	42 10	
Donaldson Iron Co., for pipe	1,468 78	
Gloucester Iron Works, for pipe	3,105 38	
L. Katzenstein, for packing	28 47	
Lowell Machine Shop, for patterns, steam-chest, etc	329 19	
Andrew J. Morse & Son, for hose caps	7 50	
National Meter Co., for meters, covers, etc	5,006 80	
Pennichuck Water Works, for gate box	2 55	
Page Belting Co., for valves	4 50	
Perrin, Seamans & Co., for kettle, melting pot, etc	133 91	
Staples Bros., for pipe, boxes, etc.,	1,120 35	
Henry R. Worthington, for meters, etc	628 01	
Wheelock Engine Co., for repairs on pumping engine	387 13	
Amounts carried forward	$16,466 97	$158,843 21

Amounts brought forward	$16,466 97	$158,843 21
Paid for PIPE, METERS, HYDRANTS, ETC.:		
To Woods, Sherwood & Co., for safety valves	6 00	
Whittier Machine Co., for hydrants,	835 92	
R. D. Wood & Co., for pipe	663 15	
American Bolt Co., for bolts, etc	99 79	
Cole & Nichols, for castings	250 38	
A. F. Nichols, for castings	30 42	
Pevey Bros., for castings	51 21	
Union Iron Foundry, for castings	165 42	
Charles E. Adams, for lead pipe, hardware, etc	2,985 19	
J. C. Bennett, for hardware	20 98	
Boutwell Bros., for iron, steel, etc.,	60 42	
Bartlett & Dow, for hardware and tools	68 66	
Charles E. Carr, for wrenches for tapping machine, etc	17 55	
George L. Cady, for meter	5 00	
H. B. Shattuck, for hardware, tools, etc	87 50	
Frederick Taylor Co., for hardware, tools, etc	50 13	
H. R. Barker Manufacturing Co., for pipe, fittings, labor, etc	2,423 44	
T. Costello & Co., for lead pipe, solder, etc	1,126 74	
Edson Manufacturing Co., for diaphragms	4 05	
Farrell & Conaton, for pipe, fittings, and labor	3 47	
S. H. Jones, for pipe, fittings, and labor	418 40	
J. Johnson, for gas radiator	15 00	
Joel Knapp & Son, for repairing lawn mower	1 25	
W. A. Mack & Co., for dippers	75	
Proprietors of Locks & Canals, for pipe	2 41	
Scannell & Wholey, for boiler, steel plates, and labor	392 28	
Amounts carried forward	$26,252 48	$158,843 21

Amounts brought forward		$26,252 48		$158,843 21
Paid for PIPE, METERS, HYDRANTS, ETC.:				
To H. H. Wilder & Co., for pipe, fittings, etc		222 45		26,474 93
Paid for SUNDRIES:				
To Appropriation for Roads and Bridges, for labor, material, and services of City Engineer	$358 56			
Appropriation for Reserved Fund, for services of City Engineer	62 55			
Appropriation for Fire Department, for labor	10 00			
Appropriation for Lighting, for frame and globe	3 00			
Lowell Gas Light Co., for gas	49 72			
Lowell Electric Light Corporation, for lighting	318 50			
New England Telephone & Telegraph Co., for service	265 79			
Western Union Telegraph Co., for telegrams	6 91			
Otis Allen & Son, for lumber, etc.	20 00			
A. P. Bateman, for lumber	11 73			
Burnham, Forrest & Davis, for lumber	193 96			
Howe Bros. & Co., for lumber	158 50			
William Kelley & Son, for sash	90			
Clarence H. Nelson, for lumber, hardware, and labor	68 32			
Amasa Pratt & Co., for lumber	79 61			
John Remick, for lumber and labor,	44 37			
Whittet & McDonald, for lumber and labor	45 81			
Sager Ashworth & Co., for files	60			
L. A. Derby & Co., for traveling expenses and labor	6 84			
W. B. Glover, for filing saws	2 60			
Joel Knapp & Son, for repairing lawn mower	1 25			
Amounts carried forward		$1,709 52		$185,318 14

Amounts brought forward	$1,709 52	$185,318 14
Paid for SUNDRIES:		
To William Knowles, for files	3 00	
A. I. Laughton, for feed box	3 75	
W. A. Mack & Co., for zinc and skimmer	1 83	
J. L. Phillips & Co., for files	2 13	
Rice & Co., for staples, wire cloth, etc	109 60	
Rollins & Son, for wheelbarrow	3 65	
C. W. Brigham, for soap	5 40	
Sylvester Bean, for turpentine, etc.	3 28	
Carleton & Hovey, for medicine and bottles	6 40	
C. B. Coburn & Co., for oil, turpentine, lead, shellac, brushes, etc	627 22	
Josiah Gates & Sons, for scrap leather, hose, and coupling	54 25	
Daniel Gage, for ice	22 50	
T. H. Jones & Co., for shellac, labor, lead, etc	14 69	
A. L. Kittredge, for paper	9 50	
Lowell Felting Mills, for felt	6 75	
C. B. Merrill, for harness dressing	3 00	
William Nichols & Co., for dualin, exploders, candles, etc	29 45	
Ormstead & Tuttle Co., for bagging,	15 47	
W. H. Spalding & Co., for shades, paper, tracing cloth, etc	81 11	
Talbot Dyewood & Chemical Co., for sal soda	3 30	
White Mountain Axle Oil Co., for oil	3 00	
C. D. Washburn, for oil and matches	1 99	
Darius Whithed, for tallow	18 31	
Stanton & Thurston, for watering street	6 50	
S. H. Weaver & Son, for roofing	7 00	
A. N. Armitstead, for repairing rubber boots	6 80	
William P. Brazer & Co., for rubber coats	7 50	
Amounts carried forward	$2,766 90	$185,318 14

Amounts brought forward	$2,766 90	$185,318 14
Paid for SUNDRIES:		
To Merrimack Rubber Co., for cuspidore, mats, and rubber coats	12 25	
Sherman & Manning, for mirror	6 50	
E. W. Bigelow & Co., for fossil meal	4 50	
Deming & Parker, for oats	46 20	
Joseph Evans, for hay	43 15	
William E. Livingston, for oats	88 98	
Joseph Miller, for oats and straw	210 75	
Parker & Hall, for oats	21 42	
R. D. Snow, for cutting and delivering hay	77 01	
E. N. Wood & Co., for oatmeal, straw, etc	40 77	
Moses Charron, for harness, racks, collars, and hames	27 00	
H. F. Ebert, for repairing harnesses,	63 28	
Fay Bros. & Hosford, for repairing carriages	34 06	
Lowell Rubber Co., for wagon springs, bands, and cord	5 06	
A.W. Mead, for dusters, socket, and snaps	3 60	
Charles F. Robinson, for difference between wagons exchanged	125 00	
Spencer & Redmond, for signs and lettering and varnishing wagon,	30 73	
Sawyer Carriage Co., for repairing carriages	63 24	
C. C. Thompson, for shoeing horses, etc	54 02	
American Bank Note Co., for engraving bonds	1,022 36	
Bacheller, Dumas & Co., for blank books, etc	256 15	
Boston Engraving Co., for photographing drawings, printing, etc	60 00	
H. C. Church & Son, for blank books, ink, tags, etc	96 50	
Citizen Newspaper Co., for envelopes, printing, and advertising,	94 85	
Amounts carried forward	$5,254 28	$185,318 14

Amounts brought forward.....	$5,254 28	$185,318 14
Paid for SUNDRIES:		
To Critic Publishing Co., for papers and advertising.....	6 10	
Campbell & Hanscom, for postals, printing, and advertising.....	41 95	
Fire and Water, for subscription...	3 00	
B. C. Gagnon & Co., for advertising,	6 01	
Holland & Daniels, for map, mounting, and oak case.....	16 00	
C. B. Hewitt & Co., for rope board,	57 78	
J. H. Jacobs, for rubber bands and penholders	3 48	
Lepine & Co., for printing and advertising	14 00	
J. Lyon, for pens.....	6 00	
Lowell Sun, for advertising.... ...	5 75	
Lowell Daily News Co., for advertising	17 17	
J. Merrill & Son, for directories, diary, and stationery.....	17 50	
F. L. Morrill, for negative of plan and prints	4 50	
Morning Mail Co., for envelopes, printing, and advertising.....	132 09	
Marden & Rowell, for advertising..	15 37	
G. C. Prince & Son, for blank books and paper.....	3 75	
John Pierce, for telephone-tablet and paper.....	2 20	
A. V. Partridge, for posting.....	10 00	
J. L. Severance, for stamp and pad,	3 05	
The Engineering and Building Record, for advertising.....	4 80	
The Engineering News Publishing Co., for subscription, etc.....	11 40	
Worcester & Co., for clock.....	4 50	
Vox Populi Press, for envelopes, printing, etc.,.....	108 55	
Charles L. Knapp, for traveling expenses of Water Board, rent of postoffice box, and postage....	248 91	
Millard F. Wright, traveling expenses, and expenses of hydrant test,	181 20	
Amounts carried forward	$6,179 34	$185,318 14

Amounts brought forward	$6,179 34	$185,318 14
Paid for SUNDRIES:		
To James P. Roberts, for traveling expenses	4 00	
F. W. Dean, for consultation	25 00	
E. D. Leavitt, for furnishing estimates for new pump, and examining Morris engine	206 68	
E. J. Leach, for pattern for meter-case	25 65	
Melvin B. Smith, for professional services	7 00	
H. C. Church & Son, for insurance,	19 00	
John B. Coleman, for insurance	15 00	
Thomas C. Lee, agent, for insurance,	30 00	
N. W. Norcross & Co., agents, for insurance	37 50	
William P. Atwood, for analysis of water	7 00	
E. F. Hathaway, for lettering windows, etc	6 74	
Thomas Delaney, for damage to property	7 24	
Frank E. Shaw, for entertainment of members of the Fire and Water Departments	57 00	
J. H. Sparks, for professional services	12 00	
Robert Wood, for professional services	2 00	
P. Conlon, for brick, cement, sand, and labor	23 00	
Conners Bros., for brick, cement, and sand	22 10	
Estate of Jonathan Tyler, for labor and material	17 84	
W. H. Fuller, for mason work and material	69 37	
C. F. Foss & Co., for brick and labor,	4 73	
Howard & Wilson, for cement, sand, lime, and brick	147 65	
William G. Howe, for labor	15 63	
William E. Livingston, for lime, cement, and brick	119 04	
Amounts carried forward	$7,060 51	$185,318 14

Amounts brought forward.....	$7,060 51	$185,318 14
Paid for SUNDRIES:		
To D. M. Prescott, for mason work....	31 53	
Charles Runels, for stone and labor,	16 88	
James Smith, for mason work.....	116 00	
E. A. & A. T. Smith, for concrete..	137 65	
White & Sweatt, for brick.....	1 85	
C. H. Hanson, for difference between horses exchanged, etc.....	516 50	
Morse & Sparks, for carriage hire..	26 85	
Murphy & Bingham, for carriage hire	16 00	
E. W. Thomas, for use of horse....	62 50	
American Express Co., for transportation.....	3 95	
Boston & Lowell Express Co., for transportation	80	
Lovejoy-Paul Express Co., for transportation.....	8 25	
New York & Boston Despatch Express Co., for transportation...	5 70	
Boston & Maine Railroad, Lowell System, for transportation.....	759 09	
Boston & Maine Railroad, for transportation.....	26 12	
		8,790 18
Total expenditure for the year 1890....		$194,108 32
Balance undrawn, Dec. 31, 1890.....		811 89
		$194,920 21

Annual Expenditures on Account of the Water Works from the Commencement to Jan. 1, 1891.

Expended in	1870	$ 95,057 00
"	1871	624,151 66
"	1872	560,708 40
"	1873	349,717 87
"	1874	233,370 63
"	1875	275,660 78
"	1876	221,502 24
"	1877	163,814 28
"	1878	158,510 15
"	1879	150,047 82
"	1880	154,391 59
"	1881	231,171 27
"	1882	173,645 92
"	1883	180,280 28
"	1884	175,290 02
"	1885	176,972 56
"	1886	169,105 22
"	1887	176,950 05
"	1888	183,279 73
"	1889	193,535 48
"	1890	194,108 32
Total expenditures to Jan. 1, 1891		$4,841,271 27
Total receipts to Jan. 1, 1891		2,453,454 47
Net cost of Water Works to Jan. 1, 1891		$2,387,816 80

SALARIES.

Appropriated and assessed in 1890....	$20,000 00	
		$20,000 00
Transferred from Appropriation for Reserved Fund.....	$3,900 00	
		3,900 00
		$23,900 00

EXPENDITURES.

Paid SALARIES OF SUNDRY OFFICERS:

To Charles D. Palmer, Mayor.....	$2,000 00
Van B. Sleeper, City Treasurer and Collector of Taxes	1,397 85
Austin K. Chadwick, City Treasurer and Collector of Taxes.....	1,102 15
Girard P. Dadman, City Clerk.....	1,800 00
David Chase, Auditor of Accounts and Clerk of the Common Council.....	1,800 00
Larkin T. Trull, City Solicitor.....	1,700 00
Henry Hoole, City Messenger.....	1,100 00
James R. Fulton, Sealer of Weights and Measures	300 00
J. Arthur Gage, City Physician....	700 00
Samuel Hanson, Milk Inspector....	300 00
Joseph J. Adams, Fish Warden....	40 00
William Seaver, Pound Keeper.....	25 00
Amount carried forward	$12,265 00

Amount brought forward	$12,265 00	
Paid SALARIES OF SUNDRY OFFICERS:		
To Abel Wheeler, Assessor of Taxes (chairman)	1,711 62	
James Scott, Assessor of Taxes	1,281 25	
Nathan D. Pratt, Assessor of Taxes,	1,281 25	
Henry C. Dexter, Assessor and Assistant Assessor	1,000 00	
Robert L. Read, Assessor and Assistant Assessor (secretary)	1,021 66	
John E. Maguire, Assessor and Assistant Assessor	1,000 00	
Fred A. Wright, Assistant Assessor,	388 88	
George S. Cheney, Assessor and Assistant Assessor (chairman)	1,043 05	
Fred N. Edgell, Assessor and Assistant Assessor	1,000 00	
Thomas J. Enright, Registrar of Voters (chairman)	450 00	
John B. Coleman, Registrar of Voters	400 00	
John P. Mahoney, Registrar of Voters	400 00	
Girard P. Dadman, Registrar of Voters (secretary)	200 00	
Total expenditure for the year 1890		$23,442 71
Balance undrawn, Dec. 31, 1890		457 29
		$23,900 00

STATE AID.

For Disabled Soldiers and Sailors and their Families, and for the Families of the Slain, under an Act of the Legislature of the Commonwealth, Chapter 192, approved May 4, 1877, and previous acts:		
Due from Commonwealth Jan. 1, 1891..	$9,044 57	
		$9,044 57

STATE AID.

Paid for AID RENDERED DISABLED SOLDIERS AND SAILORS AND THEIR FAMILIES, AND THE FAMILIES OF DECEASED SOLDIERS AND SAILORS:

Balance undrawn, Jan. 1, 1890....	$9,561 82	
		9,561 82

RECEIPTS.

Received into the treasury on account of STATE AID:

From Commonwealth, for reimbursement of State Aid of 1889..	$11,440 00	
Sundry persons, for overdrafts as follows:		
Daniel Aldrich.....	3 00	
John Briggs.....	2 00	
James M. Brown.....	4 00	
Patrick Collins.....	4 00	
J. Clapp.....	4 00	
A. B. Chapin	6 00	
Thomas Conley.....	4 00	
Amounts carried forward	$11,467 00	$9,561 82

Amounts brought forward	$11,467 00	$9,561 82
Received into the treasury on account of STATE AID:		
From Sundry persons, for overdrafts as follows:		
Peter Cassidy	1 00	
Michael Conley	24 00	
C. B. Davis	4 00	
E. Davenport	4 00	
Daniel Danahy	4 00	
I. S. Freeman	12 00	
J. L. Glines	10 00	
J. W. Hart	4 00	
W. E. T. Hapgood	4 00	
John H. Johnson	6 00	
Michael Lahiff	4 00	
John Lawless	4 00	
John McBride	3 00	
B. Mulvey	8 00	
J. S. Mellen	4 00	
Thomas Murphy	20 00	
P. S. Murray	4 00	
G. W. S. Norris	4 00	
G. S. Norris	4 00	
Michael Reilley	4 00	
S. R. Philips	9 00	
W. A. Pasho	4 00	
Edward G. Pepper	12 00	
A. J. Pike	6 00	
James Quinn	4 00	
James Reilley	12 00	
Andrew Roark	4 00	
J. B. Ripley	4 00	
P. Roark	3 00	
John Ragen	4 00	
Almon Smith	2 00	
E. C. Sculley	8 00	
S. L. Shipley	6 00	
F. Sweeney	4 00	
Peter Trainor	40 00	
R. Trainor	4 00	
R. Thompson	12 00	
Hugh Tully	4 00	
Amounts carried forward	$11,741 00	$9,561 82

Amounts brought forward.....	$11,741 00	$9,561 82
Received into the treasury on account of STATE AID:		
From Sundry persons, for overdrafts as follows:		
Thomas Toohey.....	6 00	
J. B. Whitney.....	4 00	
		11,751 00
		$21,312 82

EXPENDITURES.

Paid Sundry persons for aid rendered in 1890, as per pay-rolls.....	$13,065 50	
		$13,065 50
Balance undrawn, Dec. 31, 1890.....		8,247 32
		$21,312 82

AID FOR INDIGENT SOLDIERS AND SAILORS.

Balance undrawn Jan. 1, 1890	$4,052 15	
Appropriation	4,000 00	
		8,052 15

RECEIPTS.

Received into the treasury on account of AID FOR INDIGENT SOLDIERS AND SAILORS:		
From Commonwealth, for reimbursement for aid for 1889	$3,935 50	
Sundry persons for overdrafts, as follows:		
C. H. Browning	1 00	
Peter Cassidy	6 00	
G. W. Currier	6 00	
R. H. Cummings	6 00	
M. Dunlavey	8 00	
Dudley Davis	8 00	
P. H. Flood	4 00	
M. Glynn	6 00	
John Howard	3 00	
Thomas Mangan	1 00	
John Sullivan	40 00	
J. W. Whittier	6 00	
		4,030 50
		$12,082 65

EXPENDITURES.

Paid Sundry persons for aid rendered in 1890, as per pay-rolls.....	$8,349 00	
		$8,349 00
Balance undrawn, Dec. 31, 1890.....		3,733 65
		$12,082.65

CITY DEBT.

Appropriated and assessed in 1890.....	$126,700 00	
		$126,700 00

RECEIPTS.

Received into the treasury on account of CITY DEBT:		
From Commissioners of Sinking Funds, on account of Sinking Fund, for loan of 1880.....	$ 50,000 00	
Commissioners of Sinking Funds, on account of Water Loan Sinking Fund.....	709,073 37	
Barnard & Stanwood, for six hundred $1,000 Water Loan Bonds, dated Nov. 1, 1890...	600,000 00	
Appropriation for Water Works, for balance due on note dated Dec. 3, 1885.....	3,000 00	
		1,362,073 37
		$1,488,773 37

EXPENDITURES.

Paid on account of WATER LOAN:		
To Sundry persons, for 1214 Water Loan Bonds, which matured Nov. 1, 1890.....	$1,214,000 00	
Amount carried forward.....	$1,214,000 00	

Amount brought forward		$1,214,000 00
Paid on account of WATER LOAN:		
To Commissioners of Sinking Funds, for balance due on note dated Dec. 3, 1885	3,000 00	
		$1,217,000 00
Paid on account of ORDINARY CITY DEBT:		
To Perkins, Dupee & Co., for bonds which matured May 1, 1890	$ 7,500 00	
Perkins, Dupee & Co., for bonds which matured June 20, 1890	15,000 00	
Salem Five Cent Savings Bank, an instalment on note dated Aug. 7, 1888	5,000 00	
F. S. Mosely & Co., an instalment on note dated Dec. 21, 1888	5,400 00	
Blake Bros. & Co., an instalment on note dated Dec. 1, 1889	22,000 00	
Lowell Institution for Savings, an instalment on note dated Jan. 15, 1885	3,000 00	
Lowell Institution for Savings, an instalment on note dated Dec. 15, 1883	7,700 00	
Lowell Institution for Savings, a note which matured March 25, 1890	50,000 00	
Lowell Institution for Savings, an instalment on note dated Dec. 15, 1883	8,500 00	
Lowell Institution for Savings, an instalment on note dated Aug. 1, 1888	6,000 00	
Lowell Institution for Savings, an instalment on note dated Dec. 1, 1888	4,000 00	
Lowell Institution for Savings, an instalment on note dated March 4, 1889	4,000 00	
Lowell Institution for Savings, an instalment on note dated May 22, 1889	2,500 00	
Amounts carried forward	$140,600 00	$1,217,000 00

Amounts brought forward	$140,600 00	$1,217,000 00
Paid on account of ORDINARY CITY DEBT:		
To Lowell Institution for Savings, an instalment on note dated June 3, 1889	3,000 00	
Commissioners of Sinking Funds, an instalment on note dated July 1, 1884	1,650 00	
Commissioners of Sinking Funds, an instalment on note dated Aug. 4, 1884	7,500 00	
Commissioners of Sinking Funds, an instalment on note dated July 24, 1885	3,500 00	
Commissioners of Sinking Funds, an instalment on note dated Sept. 19, 1885	2,000 00	
Commissioners of Sinking Funds, an instalment on note dated Sept. 19, 1885	1,500 00	
Commissioners of Sinking Funds, an instalment on note dated Aug. 11, 1887	5,000 00	
Commissioners of Sinking Funds, an instalment on note dated Oct. 14, 1887	2,000 00	
Commissioners of Sinking Funds, an instalment on note dated Dec. 2, 1887	2,000 00	
Commissioners of Sinking Funds, an instalment on note dated Sept. 1, 1888	7,950 00	
		176,700 00
Total expenditure for the year 1890		$1,393,700 00
Balance undrawn Dec. 31, 1890		95,073 37
		$1,488,773 37

INTEREST.

Balance undrawn, Jan. 1, 1890	$ 112 97	
Appropriation	70,000 00	
		$70,112 97

RECEIPTS.

Received into the treasury on account of INTEREST:

From Sundry persons, for interest on taxes	$5,866 76	
First National Bank, for interest on daily balances	3,305 48	
First National Bank, for interest on Water Loan Refunding account	702 65	
Boston Five Cent Savings Bank, for premium on loan	10 00	
		9,884 89
		$79,997 86

EXPENDITURES.

Paid on account of INTEREST:

To Boston Five Cent Savings Bank (on temporary loan)	$2,994 45	
Amount carried forward	$2,994 45	

Amount brought forward.....	$2,994 45	
Paid on account of INTEREST:		
To Commissioners of Sinking Funds (on temporary loan).....	788 88	
Lowell Institution for Savings (on temporary loan).....	2,550 35	
Lowell Institution for Savings.....	32,160 44	
Lowell Five Cent Savings Bank....	1,625 00	
Salem Five Cent Savings Bank.....	1,800 00	
Commissioners of Sinking Funds...	8,554 50	
Blake Bros. & Co.....	8,800 00	
F. S. Mosely & Co.....	1,944 00	
Trustees of the estate of Thomas Nesmith	1,560 00	
Trustees of the estate of Jonathan Tyler	600 00	
Sundry persons, for interest coupons on Central Bridge Bonds.....	4,800 00	
Sundry persons, for interest coupons on Sewer Loan Bonds.....	9,530 00	
John O. Gumb, for interest on taxes,	2 93	
Stephen Griffin, for interest on taxes,	1 47	
William H. Parker, for interest on taxes	19 84	
Total expenditure for the year 1890....		$77,731 86
Balance undrawn, Dec. 31, 1890.....		2,266 00
		$79,997 86

NATIONAL BANK TAX.

Balance undrawn, Jan. 1, 1890.....	$ 5,463 80	
Assessed on stocks in National Banks, owned by non-residents in 1890..	17,096 24	
		$22,560 04

RECEIPTS.

Received into the treasury on account of NATIONAL BANK TAX:		
From Commonwealth, on account of tax of 1890	$5,269 72	
		5,269 72
		$27,829 76

EXPENDITURES.

Paid Fund for Ordinary City Debt....	$ 5,332 90	
Commonwealth, on account of tax of 1889	130 90	
Commonwealth, on account of tax of 1890	16,939 94	
		$22,403 74
Balance undrawn, Dec. 31, 1890.....		5,426 02
		$27,829 76

STATE TAX.

Assessed in 1890	$55,316 39	
		$55,316 39

EXPENDITURES.

Paid Commonwealth, State Tax of 1890, (ordinary)	$49,910 00	
Commonwealth, on account of Armory Loan	2,020 14	
Commonwealth, on account of interest on Armory Loan	3,386 25	
		$55,316 39

COUNTY TAX.

Assessed in 1890	$45,922 74	
		$45,922 74

EXPENDITURES.

Paid County of Middlesex, County Tax of 1890	$45,922 74	
		$45,922 74

TAXES.

The amount of Taxes assessed on the Polls and on the Real and Personal Estate, within the City of Lowell, for the year 1890, was as follows, viz:

Valuation of, and Tax on, Real and Personal Property.

VALUATION.		RATE.	TAX.
Of Personal Property,	$17,037,462	$17.00 per $1,000	$289,636 83
Real Estate,	45,316,150	17.00 per 1,000	770,374 55
Total Valuation,	$62,353,612	Tax on Property,	$1,060,011 38
Number of Polls, 20,021, at $2.00 each..		$40,042 00	
Number of Polls, 77, at 50 cents each...		38 50	
Total Tax on Polls.....			40,080 50
			$1,100,091 88
Tax assessed on Shares of Stock in the National Banks of Lowell held by non-residents, and which are not included in the City Valuation.....		$17,096 24	17,096 24
Grand Tax Total.....			$1,117,188 12

Appropriated and Assessed in 1890.

For City Appropriation	$956,600 00	
State Tax	55,316 39	
County Tax	45,922 74	
National Bank Tax (non-residents)	17,096 24	
Overlays	42,252 75	
Total Tax Levy		$1,117,188 12

TAXES.

	Due Jan. 1, 1890, Assessed in 1890.	Abated in 1890.	Collected in 1890.	Due December 31, 1890.
Taxes of 1885,	$ 31 52	$ 31 52		
Taxes of 1886,	228 80	206 40	$ 22 40	
Taxes of 1887,	12,673 40	904 50	240 64	$ 11,528 26
Taxes of 1888,	40,256 13	639 57	25,456 54	14,160 02
Taxes of 1889,	146,867 49	1,092 02	81,587 96	64,187 51
Taxes of 1890,	1,117,188 12	6,243 75	955,911 03	155,033 34
	$1,317,245 46	$9,117 76	$1,063,218 57	$244,909 13

ABATEMENT OF TAXES.

Balance undrawn Jan. 1, 1890	$36,832 38	
Overlays assessed in 1890	42,252 75	
Received of Joseph Bergeron	36 00	
		$79,121 13

ABATEMENTS.

To Boott Cotton Mills, on taxes of 1887, 1888, and 1889	$15,837 20	
Hamilton Manufacturing Co., on tax of 1890	760 27	
William H. Parker, on tax of 1885,	35 08	
Stephen Griffin, on tax of 1888	19 43	
Lewis D. Gumb, on tax of 1888	2 00	
John O. Gumb, on tax of 1888	33 40	
Stephen R. Dean, on tax of 1889	1 85	
F. N. Edgell, on tax of 1889	2 02	
J. B. French, on tax of 1889	76 31	
Miranda Moulton, on tax of 1889	76 15	
Frederick A. Taylor, on tax of 1889,	14 81	
J. Bennett Heirs, on tax of 1890	23 29	
W. W. Carey, on tax of 1890	30 60	
Henry H. Farrell, on tax of 1890	51 00	
Lowell Five Cent Savings Bank, on tax of 1890	39 10	
James Meadowcroft, on tax of 1890,	72 25	
James Minter, on tax of 1890	25 50	
Morning Mail Corp., on tax of 1890,	67 35	
John W. Pead, on tax of 1890	28 05	
Amasa Pratt, on tax of 1890	56 61	
Lorenzo Phelps, on tax of 1890	18 19	
Amount carried forward	$16,270 46	

Amount brought forward.....	$16,270 46		
To E. B. Peirce, on tax of 1890.....	3 84		
Frank E. Shaw, on tax of 1890....	6 80		
E. A. Smith, *et als.*, on tax of 1890..	31 02		
J. E. Shanley, on tax of 1890.....	18 53		
United States Cord Co., on tax of 1890	68 00		
L. R. J. & D. H. Varnum, on tax of 1890.....	30 60		
David H. Wilson, on tax of 1890...	8 50		
Heirs of W. W. and S. G. Wyman, on tax of 1890.....	2 80		
Sundry persons, on tax of 1885 (before payment).....	31 52		
Sundry persons, on tax of 1886 (before payment).....	206 40		
Sundry persons, on tax of 1887 (before payment).....	904 50		
Sundry persons, on tax of 1888 (before payment).....	639 57		
Sundry persons, on tax of 1889 (before payment).....	1,092 02		
Sundry persons, on tax of 1890 (before payment).....	6,243 75		
		$26,558 31	
Balance undrawn Dec. 31, 1890.....		52,562 82	
		$79,121 13	

TEMPORARY LOAN.

RECEIPTS.

Received into the treasury on account of TEMPORARY LOAN:		
From Commissioners of Sinking Funds, on loan	$100,000 00	
Boston Five Cent Savings Bank, on loan	200,000 00	
Lowell Institution for Savings, on loan	275,000 00	
		$575,000 00

PAYMENTS.

To Commissioners of Sinking Funds	$100,000 00	
Boston Five Cent Savings Bank	200,000 00	
Lowell Institution for Savings	275,000 00	
		$575,000 00

SINKING FUNDS.

Sinking Fund for the Reduction of the Water Debt.

Appropriated and assessed in 1890.....	$25,000 00	
		$25,000 00
Paid Commissioners of Sinking Funds..	$25,000 00	
		$25,000 00

Sinking Fund for the Payment of the Loan of 1880.

Appropriated and assessed in 1890.....	$4,000 00	
		$4,000 00
Paid Commissioners of Sinking Funds..	$4,000 00	
		$4,000 00

City Hall Building Lot Sinking Fund.

Appropriated and assessed in 1890.....	$7,000 00	
		$7,000 00
Paid Commissioners of Sinking Funds...	$7,000 00	
		$7,000 00

Aiken Street Sinking Fund.

Appropriated and assessed in 1890.....	$16,000 00	
		$16,000 00
Paid Commissioners of Sinking Funds...	$16,000 00	
		$16,000 00

Sinking Fund for the High Service Water Supply.

Appropriated and assessed in 1890.....	$1,800 00	
		$1,800 00
Paid Commissioners of Sinking Funds...	$1,800 00	
		$1,800 00

Sinking Fund for the Payment of the Loan of 1882.

Appropriated and assessed in 1890.....	$2,500 00	
		$2,500 00
Paid Commissioners of Sinking Funds...	$2,500 00	
		$2,500 00

Sinking Fund for New Buildings at City Farm.

Appropriated and assessed in 1890.....	$5,000 00	
		$5,000 00
Paid Commissioners of Sinking Funds...	$5,000 00	
		$5,000 00

Central Bridge Sinking Fund.

Appropriated and assessed in 1890.....	$9,600 00	
		$9,600 00
Paid Commissioners of Sinking Funds...	$9,600 00	
		$9,600 00

Intercepting Sewer Fund.

Appropriated and assessed in 1890.....	$5,000 00	
		$5,000 00
Paid Commissioners of Sinking Funds...	$5,000 00	
		$5,000 00

Water Loan Sinking Fund.

Received from Barnard & Stanwood, premium and accrued interest on six hundred $1000 Water Loan Bonds, due Nov.1, 1920.....	$34,772 23	
		$34,772 23
Paid Commissioners of Sinking Funds...	$34,772 23	
		$34,772 23

City Hall and Memorial Building Sinking Fund.

Received from Barnard & Stanwood, premium and accrued interest on ninety-five $1000 City Hall and Memorial Building Bonds, due Oct. 1, 1920...	$6,080 83	
		$6,080 83
Paid Commissioners of Sinking Funds...	$6,080 83	
		$6,080 83

FUND FOR THE REDUCTION OF THE ORDINARY CITY DEBT.

Balance undrawn Jan. 1, 1890.....	$49,461 99	
		$49,461 99
RECEIPTS.		
Received into the treasury on account of the Fund for the Reduction of the ORDINARY CITY DEBT:		
From Commonwealth, on account of Corporation Tax of 1889....	$ 947 49	
Commonwealth, on account of Corporation Tax of 1890..... ..	49,486 64	
National Bank Tax Account (balance)	5,332 90	
		55,767 03
		$105,229 02
PAYMENTS.		
To Commonwealth, on account of Corporation Tax of 1889.....	$ 29 17	
Commissioners of Sinking Funds...	55,713 21	
		$55,742 38
Balance undrawn, Dec. 31, 1890.....		49,486 64
		$105,229 02

SINKING FUNDS.

The value of the several Sinking Funds, Jan. 1, 1891, which apply to the reduction of the Water Debt, as reported by the Commissioners of Sinking Funds, is as follows:		
Water Loan Sinking Fund	$34,772 23	
Sinking Fund for the High Service Water Supply	19,101 57	
		$53,873 80
The value of the several Sinking Funds Jan. 1, 1891, which apply to the reduction of the Ordinary City Debt, as reported by the Commissioners of Sinking Funds, is as follows:		
Aiken Street Sinking Fund	$169,596 63	
Sinking Fund for the Payment of the Loan of 1882	22,746 52	
Sinking Fund for New Buildings at City Farm	45,404 51	
Central Bridge Sinking Fund	87,717 00	
Intercepting Sewer Fund	45,466 98	
Fund for the Payment of the Ordinary City Debt	302,345 14	
City Hall and Memorial Building Sinking Fund	6,080 83	
		679,357 61
Total value of the Sinking Funds Jan. 1, 1891		$733,231 41
The value of the Hapgood Wright Centennial Trust Fund Jan. 1, 1891	$1,895 64	
		$1,895 64

CARNEY MEDAL FUND.

* Received of James G. Carney, Esq., in 1858 and 1859, the amount of two hundred dollars, which is to remain a perpetual debt of the City forever; the interest to be applied in payment for the "Carney Medals" to the departments of the High School annually.....	$200 00	
		$200 00
Undrawn Jan. 1, 1891.....		$200 00

* One hundred dollars was donated Aug. 24, 1858, and accepted by the City Council Sept. 14, 1858, and one hundred dollars additional, July 16, 1859, and accepted July 26, 1859. For the information of the citizens of Lowell, the Auditor respectfully refers them to the "Annual Report of the School Committee" for the year 1859, where all the correspondence between the donor and the recipient may be found.

APPROPRIATIONS FOR 1890.

Schools	$160,000 00	
School-houses	25,000 00	
Roads and Bridges	70,000 00	
Reserved Fund	40,000 00	
Paupers	55,000 00	
Police	75,000 00	
Fire Department	80,000 00	
Sewers and Drains	20,000 00	
Commons	8,000 00	
Printing and Advertising	8,000 00	
Lighting	55,000 00	
Public Buildings	15,000 00	
City Library	13,000 00	
Health	25,000 00	
Salaries	20,000 00	
Pawtucket Boulevard	18,000 00	
Aid for Indigent Soldiers and Sailors	4,000 00	
Interest	70,000 00	
City Debt	126,700 00	
Sinking Fund for Water Debt	25,000 00	
Sinking Fund for Loan of 1880	4,000 00	
Aiken Street Sinking Fund	16,000 00	
Sinking Fund for High Service Water Supply	1,800 00	
Sinking Fund for Loan of 1882	2,500 00	
Sinking Fund for Buildings at City Farm,	5,000 00	
Central Bridge Sinking Fund	9,600 00	
Intercepting Sewer Fund	5,000 00	
		$956,600 00

DUE FROM THE CITY ON WATER LOAN,

December 31, 1890.

Date of Notes and Bonds.	To Whom Payable.	Amount.	Per Cent.	Security.	Interest, When Due.	Annual Interest.	Notes and Bonds, When Due.
1870, Nov. 1,	Sundry Persons.....	$ 86,000 00	6	Bonds,	.....	.....	1890, Nov. 1.
1871, May 1,	Lowell Institution for Savings.....	200,000 00	6	City's Note,	May 1,	$ 6,000 00	1891, May 1.
1873, June 14,	Lowell Institution for Savings.....	100,000 00	6 6/10	City's Note,	June 14 and Dec. 14,	6,600 00	1893, June 14.
1874, Oct. 14,	City Institution for Savings.....	50,000 00	6½	City's Note,	Apr. 14 and Oct. 14,	3,250 00	1894, Oct. 14.
1874, Nov. 12,	Lowell Institution for Savings.....	100,000 00	6½	City's Note,	May 12 and Nov. 12,	6,500 00	1894, Nov. 12.
1881, Nov. 1,	Blake Bros. & Co. (15 notes, $5,000 each),	75,000 00	4	City's Notes,	May 1 and Nov. 1,	3,000 00	1911, Nov. 1.
1890, Nov. 1,	Barnard & Stanwood.....	600,000 00	4	Bonds,	May 1 and Nov. 1,	24,000 00	1920, Nov. 1.
		$1,211,000 00				$49,350 00	

NOTES AND BONDS DUE FROM THE CITY,

December 31, 1890.

Date of Notes.	To Whom Payable,	Amount.	Per Cent.	Interest, When Due.	Interest Due in 1891.	Notes and Instalments, When Due.
*1871, Mar. 6,	Bequest of Thomas Nesmith.....	$ 25,000 00	6	March 6 and Sept. 6,	$1,500 00	Perpetual Debt.
†1871, Apr. 10,	Bequest of Thomas Nesmith.....	1,000 00	6	April 10 and Oct. 10,	60 00	Perpetual Debt.
1874, Aug. 7,	Lowell Institution for Savings.....	100,000 00	6½	Feb. 7 and Aug. 7,	6,500 00	1894, Aug. 7.
1889, Mar. 4,	Lowell Institution for Savings.....	30,000 00	4	March 4 and Sept 4,	1,200 00	1891, March 4, ‡, ‡, ‡.
1889, May 22,	Lowell Institution for Savings.....	22,500 00	3⅝	May 22 and Nov. 22,	770 31	1891, May 22, $2,500.
1889, June 3,	Lowell Institution for Savings.....	27,000 00	3⅝	June 3 and Dec. 3	924 37	1891, June 3, $3,000.
1889, Dec. 1,	Blake Bros. & Co. (bond)	198,000 00	4	June 1 and Dec. 1,	7,920 00	1891, Dec. 1, $22,000.
1890, July 16,	Lowell Institution for Savings.....	35,000 00	4	Jan 16 and July 16,	1,400 00	1891, July 16, $3,500.
1890, Nov. 29,	Lowell Institution for Savings.....	46,000 00	4	May 29 and Nov. 29,	1,840 00	1891, Nov. 29, $4,600.
1890, Oct. 1,	Barnard & Stanwood (bonds).....	95,000 00	4	April 1 and Oct. 1,	3,800 00	1920, Oct. 1.
1890, Dec. 23,	Commissioners of Sinking Funds..	50,000 00	4	June 23 and Dec. 23,	2,000 00	1891, Dec. 23, $5,000.
	Amount of City Debt (ordinary)...	$1,683,000 00		Int. Ordinary City Debt,	$70,329 68	
	Amount of Water Loans.....	1,211,000 00		Int. on Water Loans,	49,350 00	
	Total Amount of City Debt.....	$2,894,000 00		Total Int. on City Debt,	$119,679 68	

* Interest on the same (for the poor). † Interest on the same (High Street Church). ‡ Interest on the same (for the poor.)

DUE FROM THE CITY ON WATER LOAN,

December 31, 1890.

Date of Notes and Bonds.	To Whom Payable.	Amount.	Per Cent.	Security.	Interest, When Due.	Annual Interest.	Notes and Bonds, When Due.
1870, Nov. 1,	Sundry Persons.....	$ 86,000 00	6	Bonds,	.....	.....	1890, Nov. 1.
1871, May 1,	Lowell Institution for Savings.....	200,000 00	6	City's Note,	May 1,	$ 6,000 00	1891, May 1.
1873, June 14,	Lowell Institution for Savings.....	100,000 00	6 6/10	City's Note,	June 14 and Dec. 14,	6,600 00	1893, June 14.
1874, Oct. 14,	City Institution for Savings.....	50,000 00	6½	City's Note,	Apr. 14 and Oct. 14,	3,250 00	1894, Oct. 14.
1874, Nov. 12,	Lowell Institution for Savings.....	100,000 00	6½	City's Note,	May 12 and Nov. 12,	6,500 00	1894, Nov. 12.
1881, Nov. 1,	Blake Bros. & Co. (15 notes, $5,000 each),	75,000 00	4	City's Notes,	May 1 and Nov. 1,	3,000 00	1911, Nov. 1.
1890, Nov. 1,	Barnard & Stanwood.....	600,000 00	4	Bonds,	May 1 and Nov. 1,	24,000 00	1920, Nov. 1.
		$1,211,000 00				$49,350 00	

NOTES AND BONDS DUE FROM THE CITY,

December 31, 1890.

Date of Notes.	To Whom Payable,	Amount.	Per Cent.	Interest, When Due.	Interest Due in 1891.	Notes and Instalments, When Due.
*1871, Mar. 6,	Bequest of Thomas Nesmith.....	$ 25,000 00	6	March 6 and Sept. 6,	$1,500 00	Perpetual Debt.
†1871, Apr. 10,	Bequest of Thomas Nesmith.....	1,000 00	6	April 10 and Oct. 10,	60 00	Perpetual Debt.
1874, Aug. 7,	Lowell Institution for Savings.....	100 000 00	6½	Feb. 7 and Aug. 7,	6,500 00	1894, Aug. 7.
1874, Nov. 25,	Lowell Five Cent Savings Bank....	25,000 00	6½	May 25 and Nov. 25,	1,625 00	1894, Nov. 25.
‡1878, May 10,	Bequest of Jonathan Tyler.....	10,000 00	6	May 10 and Nov. 10,	600 00	Perpetual Debt.
1881, Dec. 1,	Lowell Institution for Savings.....	5.000 00	4	June 1 and Dec. 1,	200 00	1891, Dec. 1.
1882, May 1,	Lowell Institution for Savings.....	195.000 00	4	May 1 and Nov. 1,	7,800 00	1892. May 1.
1882, June 9,	Lowell Institution for Savings.....	60,000 00	4	June 9 and Dec. 9,	2,400 00	1892, June 9.
1882, Sept. 1,	Lowell Institution for Savings.....	30 000 00	4	March 1 and Sept. 1,	1,200 00	1892, Sept. 1.
1882, Oct. 2	Perkins, Dupee & Co. (bonds).....	50,000 00	4	April 2 and Oct. 2,	2.000 00	1902, Oct 2.
1882, Oct. 2,	William Taylor (bonds).....	6.000 00	4	April 2 and Oct. 2,	240 00	1902, Oct. 2.
1882, Nov. 1,	Brewster, Bassett & Co. (bonds)...	120,000 00	4	May 1 and Nov. 1,	4.800 00	1892, Nov. 1.
1883, Apr. 2,	Perkins, Dupee & Co. (bonds).....	25.000 00	4	April 2 and Oct. 2.	1,000 00	1903, April 2.
1883, Apr. 2,	Perkins, Dupee & Co (bonds).....	69.000 00	4	April 2 and Oct. 2,	2.760 00	1903, April 2.
1883, May 1,	Perkins, Dupee & Co. (bonds).....	22,500 00	4	May 1 and Nov. 1,	750 00	1891, May 1, $7,500.
1883, June 20,	Perkins, Dupee & Co. (bonds).....	45,000 00	4	June 20 and Dec. 20,	1,500 00	1891, June 20, $15,000.
1883, Dec. 15,	Lowell Institution for Savings.....	25,500 00	4	June 15 and Dec. 15,	1.020 00	1891, Dec. 15, $8,500.
1883, Dec. 15,	Lowell Institution for Savings.....	23.100 00	4	June 15 and Dec. 15,	924 00	1891, Dec. 15, $7,700.
1884, July 1,	Commissioners of Sinking Funds..	6 600 00	4	Jan. 1 and July 1,	264 00	1891, July 1, $1,650.
1884, Aug. 4,	Commissioners of Sinking Funds..	30,000 00	4	Feb 4 and Aug. 4,	1,200 00	1891, Aug. 4, $7,500.
1885, Jan. 15,	Lowell Institution for Savings.....	15,000 00	4	Jan 15 and July 15,	540 00	1891, Jan. 15, $3,000.
1885, July 24,	Commissioners of Sinking Funds..	17,500 00	3½	Jan. 24 and July 24.	612 50	1891, July 24, $3,500.
1885, Sept. 19,	Commissioners of Sinking Funds..	10,000 00	3½	March 19 and Sept. 19,	350 00	1891, Sept. 19, $2.000.
1885, Sept. 19.	Commissioners of Sinking Funds..	7,500 00	3½	March 19 and Sept. 19,	262 50	1891, Sept. 19, $1,500.
1887, Aug. 11,	Commissioners of Sinking Funds..	35.000 00	4½	Feb. 11 and Aug. 11,	1,575 00	1891. Aug. 11, $5,000.
1887, Oct. 14,	Commissioners of Sinking Funds..	4 000 00	4½	April 14 and Oct. 14,	180 00	1891, Oct. 14, $2.000.
1887, Dec. 2.	Commissioners of Sinking Funds..	4,000 00	4½	June 2 and Dec. 2,	180 00	1891, Dec. 2, $2,000.
1888, Aug. 1,	Lowell Institution for Savings.....	48.000 00	4	Feb. 1 and Aug. 1,	1,920 00	1891, Aug. 1, $6,000.
1888, Aug. 7,	Dupee & Sargent.....	40,000 00	4	Feb. 7 and Aug. 7,	1,600 00	1891, Aug. 7, $5,000.
1888, Sept. 1,	Commissioners of Sinking Funds..	63,600 00	4	March 1 and Sept 1,	2,544 00	1891, Sept. 1, $7,950.
1888, Dec. 1,	Lowell Institution for Savings.....	12,000 00	4	June 1 and Dec 1,	480 00	1891, Dec. 1, $4,000.
1888, Dec. 21,	F. S. Mosely & Co.....	43.200 00	4	June 21 and Dec. 21,	1,728 00	1891, Dec. 21, $5,400.
1889, Mar. 4,	Lowell Institution for Savings.....	36,000 00	4	March 4 and Sept 4,	1,360 00	1891, March 4, $4,000.
1889, May 22,	Lowell Institution for Savings.....	22,500 00	3⅝	May 22 and Nov. 22,	770 31	1891, May 22, $2,500
1889, June 3,	Lowell Institution for Savings.....	27.000 00	3⅝	June 3 and Dec. 3	924 37	1891, June 3, $3,000.
1889, Dec. 1,	Blake Bros. & Co. (bond)	198,000 00	4	June 1 and Dec. 1,	7,920 00	1891, Dec. 1, $22,000.
1890, July 16,	Lowell Institution for Savings.....	35,000 00	4	Jan 16 and July 16,	1,400 00	1891, July 16, $3,500.
1890, Nov. 29,	Lowell Institution for Savings.....	46,000 00	4	May 29 and Nov. 29,	1,840 00	1891, Nov. 29, $4,600.
1890, Oct. 1,	Barnard & Stanwood (bonds).....	95,000 00	4	April 1 and Oct. 1,	3,800 00	1920, Oct. 1.
1890, Dec. 23,	Commissioners of Sinking Funds..	50.000 00	4	June 23 and Dec. 23,	2,000 00	1891, Dec. 23, $5,000.
	Amount of City Debt (ordinary)...	$1,683,000 00		Int. Ordinary City Debt,	$70,329 68	
	Amount of Water Loans.....	1,211,000 00		Int. on Water Loans,	49,350 00	
	Total Amount of City Debt.....	$2.894.000 00		Total Int. on City Debt,	$119,679 68	

* Interest on the same (for the poor). † Interest on the same (High Street Church). ‡ Interest on the same (for the poor.)

DEBTS DUE THE CITY.

Taxes of 1887	$ 11,528 26	
Taxes of 1888	14,160 02	
Taxes of 1889	64,187 51	
Taxes of 1890	155,033 34	
Sidewalk Assessments	5,687 75	
Sewer Assessments	4,161 39	
Water Rates, Service Pipes, etc	20,919 66	
State Aid	12,785 50	
Aid for Indigent Soldiers and Sailors	4,129 00	
		$292,592 43

REAL ESTATE OWNED BY THE CITY.

City Government Building	$ 83,000 00
Huntington and Jackson Halls	40,000 00
Market House	75,000 00
City Scales	750 00
High School-house, on Anne and Kirk Streets	47,000 00
Bartlett School-house, on Clark Street	18,000 00
Butler School-house, on Gorham Street	53,000 00
Colburn School-house, on Lawrence Street	20,000 00
Edson School-house, on Highland Street	28,000 00
Franklin School-house, on Branch Street	25,000 00
Green School-house, on Merrimack Street	105,000 00
Moody School-house, on East Merrimack Street	18,000 00
Mann School-house, on Lewis Street	18,000 00
Varnum School-house, on Myrtle Street	28,320 00
Highland School-house, on Pine street	67,000 00
Pawtucket School-house, on Mammoth road	53,000 00
Primary School-house, on Powell Street near Liberty Street	8,000 00
Primary School-house, on Powell Street near Chelmsford Street	4,000 00
Primary School-house, on Rock Street	3,750 00
Primary School-house, on School Street	7,500 00
Primary School-house, on Pond Street	6,000 00
Primary School-house, on High Street	9,000 00
Primary School-house, on Carter Street	5,000 00
Primary School-house, on Fayette Street	3,500 00
Primary School-house, on Cross Street	24,000 00
Primary School-house, on Cabot Street	23,500 00
Primary School-house, on West Sixth Street	7,000 00
Primary School-house, on River Street	8,000 00
Primary School-house, on Ames Street	8,000 00
Primary School-house, on Tenth Street	9,000 00
Amount carried forward	$805,320 00

Amount brought forward	$805,320 00
Primary School-house, on Favor Street	28,000 00
Primary School-house, on Cottage Street	4,500 00
Primary School-house, on Charles Street	20,000 00
Training School-house, on Charles Street	30,000 00
Primary School-house, on Cheever Street	4,000 00
Primary School-house, on London Street	5,000 00
Primary School-house, on Chapel Street	4,000 00
Primary School-house, on Central Street	13,500 00
Primary School-house, on Howard Street	5,000 00
Primary School-house, on Worthen Street	25,000 00
Primary School-house, on Lyon Street	20,000 00
Primary School-house, on Dover Street	13,500 00
Primary School-house, on Common Street	19,000 00
Primary School-house, on Agawam Street	9,000 00
Primary School-house, on Grand Street	5,500 00
Primary School-house, on Varnum Avenue	850 00
Primary School-house, on Kirk Street	18,000 00
Primary School-house, at Middlesex Village	2,500 00
Primary School-house, on Weed Street	10,500 00
Hose Carriage-house, on Fletcher Street	18,000 00
Hose Carriage-house, on Central Street	11,000 00
Hose Carriage-house, on Warren Street	11,000 00
Engine-house, on Gorham Street	15,000 00
Engine-house, on Lincoln Street	5,500 00
Engine-house and Ward-room, on Branch Street	22,000 00
Engine-house and Ward-room, on Fourth Street	15,000 00
Engine-house, on Palmer Street	76,000 00
Engine-house and Ward-room, on High Street	24,000 00
Engine-house, on Westford Street	18,000 00
Chemical Engine-house, on Merrimack Street	4,500 00
City Farm and Buildings	103,000 00
Land and Buildings on Fletcher Street	3,500 00
Land and Buildings on Fletcher, Cross, and Lagrange Streets, and Broadway	100,000 00
Public Landing in rear of Market House and Police Stable	8,500 00
Lot of land on Chelmsford Street	7,000 00
Lot of land on Fletcher and Bowers Streets	8,000 00
Lot of land on First Street	190 00
Lot of land on Middle Street	14,000 00
Lot of land on Tenth Street	5,000 00
Lot of land on Lawrence and South Whipple Streets,	2,809 87
Lot of land on Mammoth Road	854 56
North Common	112,900 00
Amount carried forward	$1,628,924 43

Amount brought forward	$1,628,924 43
South Common	224,800 00
Mount Vernon Park	2,000 00
Belvidere Park	10,000 00
Wilson Park	1,600 00
City Hall Building Lot	100,000 00
Rogers Fort Hill Park	75,000 00
	$2,042,324 43

WATER WORKS.

The Real Estate and Personal Property belonging to the City, occupied and used by the Water Works, net cost to Jan. 1, 1891	$2,387,816 80

BURIAL GROUNDS OWNED BY THE CITY.

No. 1 Burial Ground, on School Street.
No. 2 Burial Ground, on Gorham Street.
Edson Cemetery, on Gorham street.

REAL AND PERSONAL PROPERTY OWNED BY THE CITY.

Real Estate	$2,042,324 43
Water Works, net cost to Jan. 1, 1890	2,387,816 80
Personal Property in care of Superintendent of Schools,	23,000 00
Personal Property in care of Superintendent of Streets, belonging to Streets	24,371 30
Personal Property in care of Superintendent of Streets, belonging to Sewers and Drains	4,706 64
Personal Property in care of Superintendent of Streets, belonging to Pawtucket Boulevard	165 55
Personal Property in care of City Engineer	900 00
Personal Property in care of Superintendent of Institutions at City Farm	26,077 52
Personal Property at Wood Yard	3,774 90
Personal Property at City Dispensary	1,914 50
Personal Property in care of Secretary of Overseers of the Poor	600 00
Personal Property in care of Chief Engineer of Fire Department	100,000 00
Personal Property in care of Superintendent of Street Lights	21,000 00
Personal Property in care of Librarian at City Library,	43,000 00
Personal Property in care of Board of Health	10,493 20
Personal Property in care of Sealer of Weights and Measures	250 00
Personal Property in care of Superintendent of Public Buildings, not mentioned below	3,000 00
Personal Property in care of Superintendent of Edson Cemetery	200 00
Furniture in Huntington and Jackson Halls	2,500 00
Furniture in School-houses	15,000 00
Bell on High Street Church	500 00
Clock on High Street Church	500 00
Personal Property in care of Chief of Police	14,938 55
Personal Property in care of City Weigher	225 00
Debts due the City	292,592 43
Cash in the Treasury	89,534 08
	$5,109,384 99

COST OF SEWERS LAID IN 1890.

Andover Street Extension, from the terminus of the sewer formerly laid, westerly and northerly, a distance of 315 feet to the Intercepting Sewer. "Contract," unfinished	$1,415 78
Bridge Street Outlet, from the terminus of the sewer formerly laid, southerly into Merrimack River, a distance of about 56 feet, unfinished	405 80
Blossom Street, from the sewer in Gorham Street, westerly a distance of about 464 feet. "Contract"	465 00
Chester Street, from the terminus of the sewer formerly laid, northerly a distance of about 155 feet. "Contract"	171 40
Central Street, from the terminus of the sewer formerly laid, northerly a distance of about 95 feet. "Contract"	239 06
Dalton Street, from the sewer in Aiken Avenue, westerly in Dalton Street to Exeter Street, a distance of about 410 feet. "Contract."	499 98
Dutton, Kitson, and Worthen Streets, from the terminus of the sewer, formerly laid at Broadway, westerly to Kitson Street, northerly in Kitson Street, to Worthen Street, a total distance of 1037 feet. "Contract"	2,629 47
Decatur Street, from the sewer in Salem Street, northerly a distance of about 175 feet. "Contract,"	468 66
Fayette Street, from the sewer in East Merrimack Street, southerly a distance of about 604 feet. "Contract," unfinished	706 12
Hazeltine Street, from the sewer in Powell Street, easterly a distance of about 220 feet. "Contract"	198 75
Harding and Warwick Streets, from the sewer in South Walker Street, westerly in Harding Street and northerly in Warwick Street, a total distance of about 816 feet. "Contract"	2,357 04
Amount carried forward	$9,557 06

Amount brought forward	$9,557 06
June Street, from the terminus of the sewer formerly laid, northerly a distance of about 365 feet. "Contract," unfinished	52 54
Lincoln Street, from the sewer in Hale Street, southerly a distance of about 294 feet. "Contract"	480 72
Moody Street, from the sewer in Tilden Street, southerly a distance of 294 feet. "Contract"	1,502 62
Marlborough Street, from the terminus of the sewer formerly laid, southerly a distance of about 245 feet. "Contract"	370 25
Myrtle Street Outlet, from the terminus of the sewer formerly laid, southerly a distance of about 231 feet,	1,234 64
New School Street, from the sewer in Mason Street, southerly a distance of about 226 feet. "Contract"	270 69
Pawtucketville Outlet, from the terminus of the sewer formerly laid, southerly into Merrimack River, a distance of about 40 feet	425 15
Sheldon and Royal Streets, from the sewer in Chelmsford Street, westerly in Sheldon Street, to Royal Street, northerly in Royal Street, a total distance of about 814 feet. "Contract"	2,752 71
Total cost of sewers constructed in 1890	$ 16,646 38
Cost of sewers constructed previous to 1890	1,557,365 65
Total cost of sewers to Jan. 1, 1891	$1,574,012 03

RENTS OF BUILDINGS OWNED BY THE CITY.

From	County of Middlesex, Police Court Rooms....	$ 750 00
	J. H. Guillet, store in City Hall Building.....	900 00
	Carleton & Hovey, store in City Hall Building,	1,200 00
		$2,850 00

LANDS AND BUILDINGS FOR WHICH THE CITY PAYS RENT.

To	Boston & Lowell Railroad Co., for ground rent of Huntington and Jackson Halls.....	$ 475 00
	Trustees of A. H. Hosford, for rent of rooms of City Library.....	1,200 00
	Edson Block, for rent of Reading Room.....	960 00
	Irvine Block, for rent of rooms for Board of Health	300 00
	Proprietors of Locks and Canals, on Merrimack River, for rent of land on Cheever and Aiken Streets.....	21 00
		$2,956 00

DAVID CHASE,
Auditor.

ACCOUNT OF THE CITY TREASURER AND COLLECTOR OF TAXES FOR 1890.

Lowell, Jan. 1, 1891.

To the City Council:

Gentlemen,—I have the honor to submit herewith an account of the Receipts and Payments for the financial year 1890.

Respectfully submitted,

AUSTIN K. CHADWICK,

City Treasurer and Collector of Taxes.

DR. *City of Lowell, in account with Austin K. Chadwick, City*

For cash paid on account of

Schools	$196,587 48	
School Houses	82,732 93	
Streets	125,302 59	
Reserved Fund	46,849 95	
Paupers	66,214 38	
Police	99,839 32	
Fire Department	99,928 19	
Sewers	26,801 55	
Commons	15,159 23	
Printing	6,890 16	
Lighting	56,286 88	
Public Buildings	25,513 94	
Pawtucket Boulevard	25,563 84	
Library	15,825 55	
Health	31,439 86	
Water Works	194,108 32	
Salaries	23,442 71	
Interest	77,731 86	
State Aid	13,065 50	
State Aid, Indigent Soldiers and Sailors.	8,349 00	
City Debt	1,393,700 00	
Abatement of Taxes	17,440 55	
Temporary Loans	575,000 00	
City Hall and Memorial Building	72,573 55	
Palmer Street	21,712 86	
County Tax	45,922 74	
National Bank Tax	22,403 74	
State Tax	55,316 39	
Extension of Palmer Street	3,010 48	
Improvement Andover-st. Sewer System,	3,375 05	
Sinking Fund for the Reduction of Ordinary City Debt	55,742 38	
Loan of 1880 Sinking Fund	4,000 00	
Loan of 1882 Sinking Fund	2,500 00	
Aiken Street Sinking Fund	16,000 00	
Central Bridge Sinking Fund	9,600 00	
Intercepting Sewer Sinking Fund	5,000 00	
Water Loan Sinking Fund Water Debt,	59,772 23	
New Buildings at City Farm Sink'g Fund,	5,000 00	
City Hall and Memorial Building Sinking Fund	6,080 83	
High Service Sinking Fund	1,800 00	
		$3,613,584 04
Cash balance, Jan. 1, 1891		89,534 08
		$3,703,118 12

Treasurer and Collector of Taxes, for the Financial Year 1890. Cr.

By cash received on account of		
Schools	$36,160 64	
School Houses	25,157 48	
Streets	54,741 57	
Reserved Fund	12,707 09	
Paupers	10,709 42	
Police	19,716 05	
Fire Department	20,560 00	
Sewers	11,202 50	
Commons	6,323 00	
Lighting	36 50	
Public Buildings	9,961 13	
City Hall Building Lot	42 00	
Pawtucket Boulevard	1 75	
Library	3,781 40	
Health	6,666 00	
Water Works	193,963 80	
Interest	9,884 89	
State Aid	11,751 00	
State Aid, Indigent Soldiers and Sailors,	4,030 50	
City Debt	1,362,073 37	
Abatement of Taxes	36 00	
Temporary Loans	575,000 00	
City Hall and Memorial Building	95,000 00	
National Bank Tax	5,269 72	
Extension of Palmer Street	335 15	
Sinking Fund for the Reduction of Ordinary City Debt	55,767 03	
Water Loan Sinking Fund Account	34,772 23	
Taxes of 1886	22 40	
Taxes of 1887	240 64	
Taxes of 1888	25,456 54	
Taxes of 1889	81,587 96	
Taxes of 1890	955,911 03	
City Hall and Memorial Building Sinking Fund	6,080 83	
		$3,634,949 62
Cash balance, Jan. 1, 1890		68,168 50
		$3,703,118 12

CITY OF LOWELL.

In Board of Aldermen, Jan. 20, 1891.

Read and referred to the Joint Committee on Accounts.

Sent down for concurrence.

MICHAEL J. DOWD, *City Clerk.*

In Common Council, Jan. 20, 1891.

Read and referred in concurrence.

DAVID CHASE, *Clerk.*

REPORT OF THE COMMISSIONERS OF SINKING FUNDS FOR THE YEAR 1890.

LOWELL, MASS., Jan. 1, 1891.

TO THE CITY COUNCIL:

Gentlemen,—The Commissioners of Sinking Funds of the City of Lowell have the honor to submit the following report of the several Sinking Funds of said city for the year 1890, together with that of the Hapgood Wright Centennial Trust Fund.

Full value of all Sinking Funds Jan. 1, 1891	$ 733,231 41	
Full value of all Sinking Funds Jan. 1, 1890	1,288,925 01	
Decrease during 1890		$555,693 60
Value of Water Loan Sinking Fund Jan. 1, 1891	$ 53,873 80	
Value of Water Loan Sinking Fund, Jan. 1, 1890	683,444 35	
Decrease during 1890		$629,570 55
Value of all other Sinking Funds, Jan. 1, 1891	$679,357 61	
Value of all other Sinking Funds, Jan. 1, 1890	605,480 66	
Increase during 1890		73,876 95
Balance, decrease as above		$555,693 60

Value of Hapgood Wright Centennial Trust Fund, Jan. 1, 1891.....	$1,895 64	
Value of Hapgood Wright Centennial Trust Fund, Jan. 1, 1890.....	1,943 23	
Decrease during 1890.....		$47 59

Two Sinking Funds have been closed during the year by the payment to the city of the full amounts standing to their credit, viz:

Water Loan Sinking Fund (old).....	$709,073 37	
Loan of 1880, Sinking Fund.....	46,907 85	
		$755,981 22

Two new Sinking Funds have been opened during the year, viz:

Water Loan Sinking Fund (new), receiving credit of.....	$34,772 23	
City Hall and Memorial Building Sinking Fund, receiving credit of.....	6,080 83	
		$40,853 06

The receipts, payments, present value, and list of securities of each Sinking Fund follow.

	Securities.	*Cash.*	*Total.*
Water Loan Sinking Fund (Old).			
Balance on hand Jan. 1, 1890.....	$528,175 00	$138,578 66	$666,753 66
Received during 1890:			
Cash—Income on investments.....		29,206 38	
Income on bank deposits.....		3,431 41	
Securities sold or matured...		629,520 25	
Annual appropriation.....		25,000 00	
Securities—Bought during 1890.....	116,663 33		
	$644,838 33	$825,736 70	
Payments during 1890:			
Securities—Sold and charged off....	644,838 33		
Cash—Paid for securities.....		116,663 33	
		$709,073 37	
Full amount cash paid to City of Lowell (to close Sinking Fund).		709,073 37	
Decrease during 1890.....			$666,753 66
Water Loan Sinking Fund (New).			
Balance on hand Jan. 1, 1890.....			
Received during 1890:			
Cash—City of Lowell premium and accrued interest on bonds sold..		$34,772 23	
Amount on hand Jan. 1, 1891.....		$34,772 23	$34,772 23
Increase during 1890.....			$34,772 23
Securities belonging to this Fund:			
Cash deposited in First National Bank, Lowell, 3¼ per cent.....			$34,772 23

	Securities.	*Cash.*	*Total.*
High Service Water Loan Sinking Fund.			
Balance on hand Jan. 1, 1890.....	$ 5,325 81	$11,364 88	$16,690 69
Received during 1890:			
Cash—Income on investments		272 50	
Income on bank deposits.....		338 38	
Annual appropriation.....		1,800 00	
Securities bought during 1890.....	13,206 30		
	$18,532 11	$13,775 76	
Payments during 1890:			
Cash for securities purchased.....		13,206 30	
Balance on hand Jan. 1, 1891.....	$18,532 11	$569 46	19,101 57
Increase during 1890			$2,410 88
Securities belonging to this Fund:			
1 Town of Beverly bond, $1000, 4 per cent		$1,035 55	
1 Town of Beverly bond, $1000, 4 per cent		1,028 30	
1 Town of Pawtucket bond, $500, 5 per cent		569 72	
1 City of Providence bond, $1000, 5 per cent		1,220 54	
8 City of Providence bonds, $1000, 5 per cent		8,759 20	
3 City of Providence bonds, $1000, 5 per cent		3,418 80	
2 City of Lowell P. M. S. notes, $1000, 4 per cent.....		2,000 00	
1 City of Lowell P. M. S. note, $500, 4 per cent.....		500 00	$18,532 11
Cash deposited in First National Bank, Lowell, 3¼ per cent.....			569 46
			$19,101 57

	Securities.	*Cash.*	*Total.*
Loan of 1880 Sinking Fund.			
Balance on hand Jan. 1, 1890.....	$9,026 97	$33,279 67	$42,306 64
Received during 1890:			
Cash—Income on investments		582 50	
Income on bank deposits.....		740 27	
Annual appropriation.....		4,000 00	
Securities sold.....		8,305 41	
	$9,026 97	$46,907 85	
Paid during 1890:			
Securities sold and charged off.....	9,026 97		
Cash—To City of Lowell to close Sinking Fund.....		46,907 85	
Balance			
Decrease during 1890.....			$42,306 64
City Hall and Memorial Build'g Loan Sink'g Fund.			
Balance on hand Jan. 1, 1890.....			
Received during 1890:			
Cash—City of Lowell, premium and accrued interest on bonds sold.		$6,080 83	
Amount on hand Jan. 1, 1891,		$6,080 83	$6,080 83
Increase during 1890.....			$6,080 83
Securities belonging to this fund:			
Cash on deposit in First National Bank, Lowell, 3¼ per cent.....			$6,080 83

	Securities.	*Cash.*	*Total.*
Aiken Street Sinking Fund.			
Balance on hand Jan. 1, 1890.....	$ 46,405 43	$101,672 04	$148,077 47
Received during 1890:			
Cash—Income on investments.....		2,995 00	
Income on bank deposits.....		2,864 83	
Annual appropriation.....		16,000 00	
Securities matured and paid..		4,000 00	
Securities bought.....	122,359 75		
	$168,765 18	$127,531 87	
Paid during 1890:			
Securities matured and charged off..	4,340 67		
Cash for securities bought.....		122,359 75	
Amount on hand Jan. 1, 1891.....	$164 424 51	$5,172 12	$169,596 63
Increase during 1890.....			$21,519 16
Securities belonging to this Fund:			
1 City of Cambridge bond, $1000, 6 per cent.....		$1,308 33	
1 City of Cambridge bond, $1000, 6 per cent.....		1,099 30	
1 City of Cambridge bond, $1000, 6 per cent.....		1,022 90	
2 City of Cambridge bonds, $1000, 6 per cent.....		2,143 00	
1 City of Keene bond, $500, 4 per cent.....		525 05	
1 City of Providence bond, $10,000, 5 per cent.....		12,111 12	
1 City of Providence bond, $1000, 5 per cent.....		1,220 54	
Carried forward.....		$19,430 24	

	Securities.	*Cash.*	*Total.*
Brought forward		$19,430 24	
1 Town of Bedford note, $8000, 7 per cent		10,220 00	
1 Town of Pawtucket bond, $500, 5 per cent		569 72	
23 Town of Pawtucket bonds, $500, 5 per cent		12,543 05	
3 City of Portland bonds, $1000, 6 per cent		3,610 00	
12 City of Lowell P. M. S. notes, $1000. 4 per cent		12,000 00	
1 City of Lowell P. M. S. note, $500, 4 per cent		500 00	
1 City of Salem bond, $1000, 5 per cent		1,125 80	
1 City of Lynn bond, $1000, 5 per cent		1,129 40	
1 Town of Marshfield note, $27,000, 4 per cent		27,000 00	
3 Town of Marshfield notes, $1000, 4 per cent		3,000 00	
1 Town of Everett note, $26,000, 7 per cent		28,340 00	
4 Town of Danvers bonds, $1000, 5 per cent		4,571 60	
1 Town of Arlington bond, $1000, 5 per cent		1,082 10	
25 Town of Wayland bonds, $1000, 5 per cent		27,052 50	
2 Town of Wilton bonds, $500, 6 per cent		1,174 10	
1 City of Portsmouth bond, $1000, 4 per cent		1,015 80	
1 City of Portsmouth bond, $1500, 4 per cent		1,523 70	
4 City of Lewiston bonds, $1000, 5 per cent		4,806 00	
3 City of Springfield bonds, $1000, 6 per cent		3,730 50	$164,424 51
Book value of securities			$164,424 51
Cash deposited in First National Bank, Lowell, 3¼ per cent			5,172 12
			$169,596 63

Loan of 1882 Sinking Fund.	*Securities.*	*Cash.*	*Total.*
Balance on hand Jan. 1, 1890.....		$19,655 30	$19,655 30
Received during 1890:			
Cash—Income on investments.....		45 00	
Income on bank balances.....		546 22	
Annual appropriation.....		2,500 00	
Securities bought during 1890.....	$22,198 60		
	$22,198 60	$22,746 52	
Payments during 1890:			
Cash for securities bought.....		22,198 60	
Amount on hand Jan. 1, 1891.....	$22,198 60	$547 92	$22,746 52
Increase in 1890.....			$3,091 22
Securities belonging to this Fund:			
2 City of Bangor bonds, $1000, 7 per cent.....		$2,122 20	
1 Town of Stoughton bond, $2000, 4 per cent.....		2,002 00	
1 Town of Stoughton bond, $2000, 4 per cent.....		2,005 80	
1 City of Nashua bond, $1000, 6 per cent.....		1,031 80	
2 City of Chelsea bonds, $1000, 6 per cent.....		2,063 60	
4 City of Chelsea bonds, $1000, 6 per cent.....		4,360 80	
1 City of Manchester bond, $500, 6 per cent.....		515 90	
2 City of Manchester bonds, $1000, 6 per cent.....		2,143 00	
8 City of Manchester bonds, $500, 6 per cent.....		4,360 80	
1 City of Manchester bond, $1000, 6 per cent.....		1,061 80	
1 City of Manchester bond, $500, 6 per cent.....		530 90	$22,198 60
Book value of securities.....			$22,198 60
Cash deposited in First National Bank, Lowell, 3¼ per cent.....			547 92
			$22,746 52

	Securities.	*Cash.*	*Total.*
New Buildings at City Farm Sinking Fund.			
Balance on hand Jan. 1, 1890.....	$11,035 17	$28,385 05	$39,420 22
Received during 1890:			
Cash—Income on investments.....		368 00	
Income on bank balances....		701 46	
Annual appropriation.....		5,000 00	
Securities matured and paid..		6,000 00	
Securities bought during 1890.....	38,604 87		
	$49,640 04	$40,454 51	
Payments during 1890:			
Cash for securities bought.....		38,604 87	
Securities matured and charged off..	6,085 17		
Amount on hand Jan. 1, 1891.....	$43,554 87	$1,849 64	$45,404 51
Increase in 1890.....			$5,984 29
Securities belonging to this Fund:			
20 District of Columbia bonds, $1000, 6 per cent.....		$20,516 67	
3 City of Lowell I. S. notes, $1650, 4 per cent.....		4,950 00	
1 City of Cambridge bond, $1000 6 per cent.....		1,031 80	
12 City of Portland bonds, $1000, 6 per cent.....		12,970 80	
4 Town of Arlington bonds, $1000, 6 per cent.....		4,085 60	$43,554 87
Book value of securities.....			$43,554 87
Cash deposited in First National Bank, Lowell, 3¼ per cent.....			1,849 64
			$45,404 51

	Securities.	*Cash.*	*Total.*
Central Bridge Sinking Fund.			
Balance on hand Jan. 1, 1890.....	$ 5,085 17	$70,518 32	$75,603 49
Received during 1890:			
Cash—Income on investments.....		220 00	
Income on bank deposits....		2,378 68	
Annual appropriation.....		9,600 00	
Securities matured and paid..		1,500 00	
Securities bought.....	50,000 00		
	$55,085 17	$84,217 00	
Payments during 1890:			
Cash for securities.....		50,000 00	
Securities matured and charged off..	1,585 17		
	$53,500 00	$34,217 00	$87,717 00
Increase during 1890.....			$12,113 51
Securities belonging to this Fund:			
1 City of Lowell P. M. S. note, $500, 4 per cent.....		$ 500 00	
3 City of Lowell P. M. S. notes, $1000, 4 per cent.....		3,000 00	
1 City of Lowell note, $50,000, 4 per cent.....		50,000 00	$53,500 00
Book value of securities.....			$53,500 00
Cash deposited in First National Bank, Lowell, 3¼ per cent.....			34,217 00
			$87,717 00

	Securities.	*Cash.*	*Total.*
Ordinary City Debt Sinking Fund.			
Balance on hand Jan. 1, 1890.....	$183,812 05	$57,282 36	$241,094 41
Received during 1890:			
Cash—Income on investments.....		8,198 00	
Income on bank deposits....		2,113 14	
Securities sold and matured..		37,000 00	
Corporation and National Bank taxes.....		55,713 21	
Securities bought.....	133,382 33		
	$317,194 38	$160,306 71	
Payments during 1890:			
Cash—For securities.... $133,382 33			
To City of Lowell, balance on loan of 1880..... 3,092 15		136,474 48	
Securities sold and charged off.....	38,681 47		
	$278,512 91	$23,832 23	$302,345 14
Increase during 1890.....			$61,250 73
Securities belonging to this Fund:			
1 City of Lawrence bond, $1000, 6 per cent.....		$ 1,231 33	
1 City of Lawrence bond, $5000, 6 per cent.....		5,404 50	
7 City of Lawrence bonds, $1000, 6 per cent.....		7,500 50	
23 City of Lawrence bonds, $1000, 6 per cent.....		24,644 50	
37 City of Bangor bonds, $1000, 6 per cent.....		46,242 60	
4 City of Bangor bonds, $500, 6 per cent.....		2,499 60	
Carried forward.....		$87,523 03	

	Securities.	*Cash.*	*Total.*
Brought forward.....		$87,523 03	
1 City of Keene bond, $1000, 6 per cent.....		1,117 00	
1 City of Keene bond, $500, 6 per cent.....		525 05	
1 City of Lynn bond, $1000, 6 per cent.....		1,071 50	
2 Town of Arlington bonds, $1000, 5 per cent.....		2,264 17	
9 State of New Hampshire bonds, $100, 6 per cent.....		1,085 25	
7 City of Providence bonds, $1000, 5 per cent.....		8,524 49	
1 State of Rhode Island bond, $3000, 6 per cent.....		3,225 00	
3 City of Newton bonds, $1000, 5 per cent.....		3,480 00	
2 City of Newburyport bonds, $1000, 4 per cent.....		2,064 00	
1 City of Newburyport bond, $1000, 4 per cent.....		1,004 70	
17 Town of Pawtucket bonds, $500, 5 per cent.....		9,573 46	
2 City of Springfield bonds, $1000, 6 per cent.....		2,641 66	
2 City of Portsmouth bonds, $1000, 6 per cent.....		2,084 00	
2 City of Fall River bonds, $1000, 6 per cent.....		2,180 40	
1 City of Somerville bond, $1000, 5 per cent.....		1,049 20	
1 City of Lowell note, $15,000, 3½ per cent., 5-10 paid.....		7,500 00	
1 City of Lowell note, $35,000, 3½ per cent., 5-10 paid.....		17,500 00	
1 City of Lowell note, $50,000, 4½ per cent., 3-10 paid.....		35,000 00	
1 City of Lowell note, $10,000, 4½ per cent., 3 5 paid.....		4,000 00	
1 City of Lowell note, $20,000, 3½ per cent., ½ paid.....		10,000 00	
1 City of Lowell note, $10,000, 4½ per cent., 3-5 paid.....		4,000 00	
8 City of Lowell notes, $7950, 4 per cent.....		63,600 00	
2 City of Lowell P. M. S. notes, $1000, 4 per cent.....		2,000 00	
Carried forward.....		$273,012 91	

	Securities.	*Cash.*	*Total.*
Brought forward		$273,012 91	
5 City of Lowell Sewer Loan notes, $1000, 4 per cent		5,000 00	
1 City of Lowell note, $500, 4 per cent		500 00	$278,512 91
Book value of securities			$278,512 91
Cash—On deposit in First National Bank, Lowell, 3¼ per cent.,			23,619 53
On deposit in Mechanics' Savings Bank, 4 per cent			212 70
			$302,345 14
Intercepting Sewer Sinking Fund.			
Balance on hand Jan. 1, 1890	$ 8,385 17	$30,937 96	$39,323 13
Received during 1890:			
Cash—Income from investments		352 00	
Income from bank deposits		877 02	
Annual appropriation		5,000 00	
Securities sold and matured		2,650 00	
Securities bought	38,418 90		
	$46,804 07	$39,816 98	
Payments during 1890:			
Cash for securities		38,418 90	
Securities sold, matured, and charged off	2,735 17		
Amount on hand Jan. 1, 1891	$44,068 90	$1,398 08	$45,466 98
Increase during 1890			$6,143 85

	Securities.	*Cash.*	*Total.*
Securities belonging to this Fund:			
3 City of Providence bonds, $10,000, 5 per cent		$34,188 00	
3 City of Providence bonds, $1000, 5 per cent		3,418 80	
1 State of New Hampshire bond, $500, 6 per cent		601 70	
1 City of Dover bond, $200, 6 per cent		210 40	
1 City of Lowell Sewer note, $1650, 4 per cent		1,650 00	
4 City of Lowell P. M. S. notes, $1000, 4 per cent		4,000 00	$44,068 90
Book value of securities			$44,068 90
Cash on deposit in First National Bank, Lowell, 3¼ per cent			1,398 08
			$45,466 98
Hapgood Wright Centennial Trust Fund.			
Balance on hand Jan. 1, 1890	$1,140 08	$ 803 15	$1,943 23
Receipts during 1890:			
Cash—Income on investments		30 00	
Income on bank balances		62 49	
Securities sold and matured		1,000 00	
	$1,140 08	$1,895 64	
Payments during 1890:			
Securities matured, paid, and charged off	1,140 08		
Amount on hand Jan. 1, 1891		$1,895 64	1,895 64
Decrease during 1890			$47 59

	Securities.	*Cash.*	*Total.*
Securities belonging to this Fund:			
Cash—On deposit in Lowell Institution for Savings.....			$ 391 57
On deposit in City Institution for Savings.....			1,504 07
			$1,895 64

Respectfully submitted,

JAMES C. ABBOTT,
A. M. CHADWICK,
C. S. LILLEY,

Commissioners of Sinking Funds of the City of Lowell, for the year 1890.

REPORT OF JOINT STANDING COMMITTEE ON ACCOUNTS, ON THE ACCOUNT OF THE TREASURER, ETC.

To The City Council:

The Joint Committee on Accounts of the City Council of the City of Lowell, to whom were referred the accounts of the City Treasurer and of the Commissioners of Sinking Funds, for the financial year, ending Dec. 31, 1890, have attended to the business committed to them, and report:

The Joint Standing Committee on Accounts of the City Council of the City of Lowell, for the year 1891, have made, with the assistance of Mr. Albert W. Mann, expert accountant, of Boston, a thorough examination of the accounts of the City Treasurer and of the Commissioners of Sinking Funds, for the financial year ending Dec. 31, 1890, and find them to be correct. We herewith present the report of Mr. Mann, the accountant, all of which is respectfully submitted.

THOMAS J. ENRIGHT,
J. W. CASSIDY,
JOHN J. GILBRIDE,
FRED. HORNE,

Joint Standing Committee on Accounts of the City Council of the City of Lowell, for the year 1891.

REPORT OF ACCOUNTANT.

No. 48 Congress Street,
Boston, March 12, 1891.

Thomas J. Enright, Esq., Chairman of Committee on Accounts for the City of Lowell:

Dear Sir,— Having been appointed to audit the Books and Accounts of the City Treasurer, for the year ending Dec. 31, 1890, I beg leave to submit the following report:

I have made a thorough examination of all the books in detail.

Cash Book.

The receipts from Taxes and Water Rates are correctly entered upon this book from the books of original entry, and all other receipts are duly accounted for. I find proper vouchers for all payments.

The cash balance Jan. 1, 1890, was	$ 68,168	50
Amount received for the year	3,634,949	62
	$3,703,118	12
Amount paid out for the year	$3,613,584	04
Balance on hand Jan. 1, 1891	89,534	08
	$3,703,118	12

The cash balance, taken March 11, I find to be as follows:

Total receipts since Jan. 1, 1891	$355,655 12
Total payments since Jan. 1, 1891	236,639 19
Balance	$119,015 93

Deposited in the First National Bank	$124,743 10
Checks, specie, and bills in office	3,749 46
	$128,492 56
Less checks drawn but not paid	9,476 63
	$119,015 93

I have cast up the accounts on all the books of the Treasurer, and find them correct. The entries from the

JOURNAL TO THE LEDGER

are properly placed. The balances in the ledger are correct and correspond with the balance sheet of the Treasurer.

In company with the Commissioners the Sinking Funds belonging to the City were carefully examined, and the securities agree with the list. The income from these investments is correctly accounted for on the books of the Secretary and Treasurer.

The "Hapgood Wright Centennial Trust Fund" now amounts to $1,895.64.

I desire to express my thanks to the Treasurer and his Assistants for their courtesy and the aid rendered me while making this examination.

I would also commend the neatness and accuracy in keeping the accounts, showing great care and faithfulness on the part of all connected with the office.

Very respectfully yours,

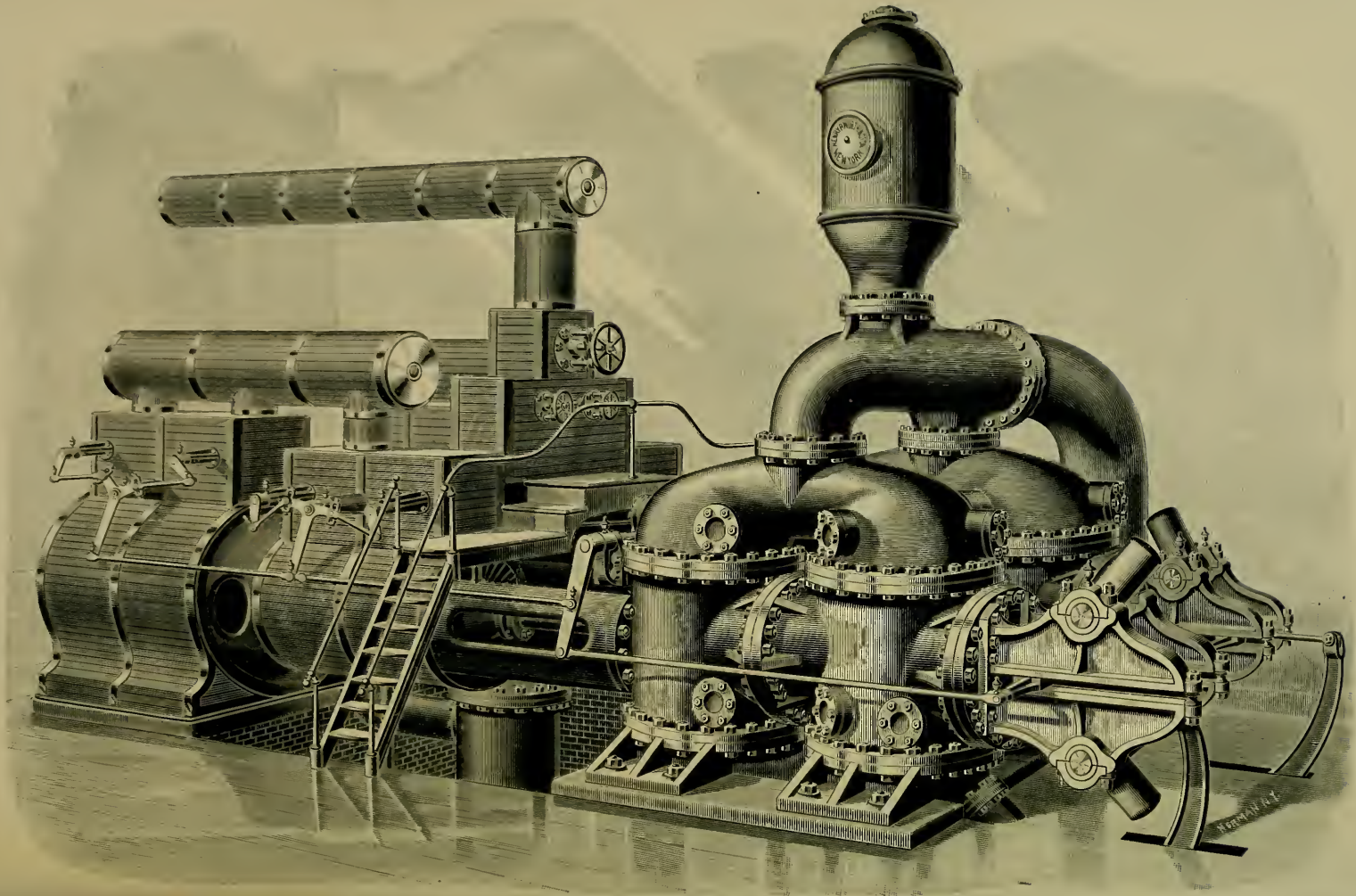
ALBERT W. MANN,

Accountant.

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FAC-SIMILE NEW 10,000,000 GALLON WORTHINGTON PUMPING ENGINE FOR CITY OF LOWELL.

Financial Statement of Water Works for 1890.

INCOME.—Statement of Charges, Collections, Abatements, Net Receipts, and Uncollected Amounts.

Material and Labor.	Re-laid Services.	New Services.	Meters Sold.	Water by Rates.	Water by Meter.	1890. Total Charges.	1889. Charges for Comparison.	Abatements.	Received by City Treasurer.	Refunds from Receipts.	Net Receipts.	UNCOLLECTED. Shut-off.	UNCOLLECTED. 1890 Transfer.
.....	.....	.....	.....	.....	.....	$ 16,397 55	$ 19,681 10	$ 459 16	$ 15,561 94	$ 17 59	.....	$226 50	$ 149 95
$ 21 15	$ 32 29	$ 61 33	$ 96 00	$ 426 85	$ 285 00	931 34	810 80	52 00	870 09	.....	$ 6.725 11	8 25	1 00
14 05	.....	.....	137 00	129 01	203 10	555 14	705 67	.....	529 79	.....	4,131 42	.....	25 35
265 11	30 59	22 95	260 50	103.556 01	18,932 00	123.084 54	114,470 94	3.528 17	119,283 90	429 83	2,705 01	195 35	77 12
64 14	177 09	167 77	376 00	1,756 91	192 90	2.848 77	2,615 23	85 97	2,676 66	.....	4.365 42	.....	86 14
77 60	258 76	371 74	762 50	2,581 52	250 05	4,357 25	3,903 95	187 49	4.155 81	.....	43,991 38	.....	13 95
98 17	302 47	302 36	464 00	2,308 89	21,459 82	24,996 83	26,659 26	226 93	24,597 54	55	38,220 31	53 62	118 74
64 85	351 01	228 33	637 00	825 21	404 03	2.561 29	2,368 10	47 70	2.486 44	.....	23.477 21	.....	27 15
60 82	168 72	259 67	432 00	839 80	484 20	2,280 41	2,106 57	53 30	1,965 04	.....	27,573 88	.....	262 07
135 01	69 78	287 66	560 00	1.068 53	19.574 80	21,866 10	18,759 35	93 75	18.283 79	8 00	18,933 52	.....	3,488 56
138 48	426 02	206 23	134 00	728 82	445 65	2.262 44	1,957 59	136 50	1,715 58	2 00	8,737 12	.....	410 36
344 83	125 71	191 26	830 00	505 74	415 95	2,500 08	1,715 27	38 42	1.740 42	2 00	7.487 97	.....	721 24
38 46	9 60	31 5 0	144 00	357 77	14.978 83	15.611 08	15,522 14	.....	556 77	.....	7.615 45	.....	15,054 31
$1,322 67	$1,952 04	$2,130 80	$4,833 00	$115,085 06	$77.626 33	$220,252 82	$211,275 97	*$4,909 39	$194,423 77	$459 97	$193,963 80	$483 72	$20.435 94

1890 Water Works Account as per City Auditor.

Balance undrawn January 1, 1890	$956 41	
		$956 41
Received into the treasury on account of WATER WORKS:		
From sundry persons, 1887 account	$ 3 90	
1888 "	465 60	
1889 "	20,396 13	
1890 "	173,098 17	
		$193,963 80
		$194,920 21
Total expenditures in 1890		194,108 32
Balance undrawn January 1, 1891		$811 89

* In "Abatement" column are included clerical and other errors in charges made; also voted abatements by authority of Water Board; also, all adjustments necessitated by changing of Rate Property to Metered Property.

OUTGO.—Statement of Expenditures for Interest, Maintenance and Extension.

R. Shop Repairs.	PUMPING STATION. Coal.	PUMPING STATION. Labor.	PUMPING STATION. Material.	CONSTRUCTION OR EXTENSION. Labor.	CONSTRUCTION OR EXTENSION. Material.	CONSTRUCTION OR EXTENSION. Salary Foreman.	NEW SERVICES. Labor.	NEW SERVICES. Estimated Material.	GENERAL MAINTENANCE. Salary. President and Supt.	Office Pay Roll.	Inspectors' Pay Roll.	Labor.	RELAID SERVICES. Labor.	RELAID SERVICES. Estimated Material.	General Expense.	Material.	Stable.	MISCELLANEOUS. Vacancy Refunds.	Interest.	New Engine.	Bond Plate.	TOTAL. Expended in 1890.
$ 13 50	$1,644 97	$436 10	$308 79	.....	$ 228 39	.....	$109 37	$109 36	$166 66	$364 30	$345 20	$497 18	$105 25	$154 24	$236 78	$ 274 27	$ 50 89	$ 179 62	$ 300 00	.....	.....	$6,651 57
33 75	3,075 56	345 88	60 02	.....	598 91	.....	.....	.....	166 68	291 44	276 16	520 17	.....	.....	60 78	112 42	9 08	.....	.....	.....	.....	5,966 76
67 50	372 62	435 34	644 97	.....	106 08	.....	46 00	30 27	166 66	364 30	427 70	465 20	55 75	26 66	236 24	67 29	383 77	13 50	2,070 00	.....	.....	6,401 44
46 12	285 10	383 85	114 29	$ 56 74	264 29	$ 84 36	204 84	362 36	166 66	291 44	388 91	180 96	205 22	410 77	181 73	145 70	87 71	.....	3,125 00	.....	.....	8,191 48
70 25	595 96	502 66	210 87	321 99	994 69	105 45	321 25	368 14	166 68	368 80	345 20	347 62	283 75	393 92	263 14	121 46	86 43	1.133 09	15,250 00	.....	.....	23,413 49
63 00	.....	422 71	164 33	377 88	3,587 50	84 36	268 35	405 76	166 66	278 16	376 66	371 66	251 10	511 43	343 42	116 00	77 87	17 43	9,570 00	.....	.....	18,278 89
135 12	3,836 43	361 46	270 53	399 12	632 04	84 36	208 66	307 48	166 66	278 16	379 16	624 92	188 35	485 62	130 93	148 44	478 58	3 00	420 00	.....	.....	10,569 68
267 18	.....	503 11	112 38	377 74	1.387 75	105 45	287 75	331 87	166 68	347 70	477 70	848 80	231 56	155 24	305 37	182 45	145 98	36 25	26.220 00	.....	.....	33,042 23
216 37	.....	406 84	53 94	400 36	819 62	84 36	272 85	368 07	166 66	326 16	333 66	387 77	192 10	351 72	90 15	211 73	71 56	1 01	180 00	.....	.....	5,832 12
244 11	.....	394 96	244 31	425 36	1.654 92	84 36	165 10	263 76	166 66	386 16	276 16	432 78	211 35	432 95	143 30	1,216 79	62 61	.....	2,165 00	.....	.....	9,761 16
116 12	.....	514 85	512 78	669 77	1.166 54	105 45	219 43	273 81	166 68	422 70	345 20	501 44	230 75	267 49	175 70	28 85	95 17	.....	*51,370 00	$101 47	$1,022 36	58,679 25
84 50	.....	285 88	39 21	224 42	218 99	.....	47 25	36 92	166 66	259 62	207 12	328 76	96 15	22 76	486 42	149 25	75 53	.....	4,342 50	61 98	.....	7,320 25
$1,357 52	$9,810 64	$4,993 64	$2,736 42	$3,253 38	$11.659 72	†$738 15	$2,150 85	$2 857 80	$2 000 00	$3,978 94	$4,178 83	$5,507 26	$2,051 33	$3,212 80	$2,653 96	$2,774 65	$1,625 18	$1,383 90	$115,012 50	‡$163 45	$1,022 36	$194.108 32

* Includes $3,000 paid on note dated December 3, 1885. † Balance of Foreman's salary charged to "Maintenance Labor." ‡ Will be charged to New Engine Loan after same is negotiated.

EIGHTEENTH

ANNUAL REPORT

OF THE

Lowell Water Board,

TO THE

CITY COUNCIL OF THE CITY OF LOWELL, MASS.,

AND THE

REPORTS OF THE SUPERINTENDENT OF WATER WORKS AND OF THE CITY ENGINEER TO THE WATER BOARD, FOR 1890.

LOWELL, MASS.:
HARRINGTON BROS., PRINTERS,
1891.

CITY OF LOWELL.

In Common Council, Jan. 13, 1891.

Received and ordered on file.
Sent down for concurrence.

DAVID CHASE, *Clerk.*

In Board of Aldermen, Jan. 15, 1891.

Received and ordered on file, in concurrence.

MICHAEL J. DOWD, *City Clerk.*

WATER DEPARTMENT, 1890.

WATER BOARD.

JOHN STOTT, *Prest.*, term expires second Monday in March, 1892.
WATSON A. DICKINSON, term expires first Monday in January, 1891.
MILES F. BRENNAN, term expires second Monday in March, 1891.
ARTHUR F. SALMON, term expires second Monday in March, 1893.
EDWARD W. THOMAS, term expires second Monday in March, 1894.
CHARLES L. KNAPP, *Secretary and Clerk.*

MILLARD F. WRIGHT, *Superintendent.*

THOMAS F. DOYLE, *Foreman.*
WILLIAM JOYCE, *Asst. Foreman.*
ANTHONY F. COGER, *Services.*
WALTER P. WILEY, *Meter Repairs.*

LEONARD T. FARRIS, *Service Clerk.*
MARY G. SAWYER, *Book-keeper.*

JAMES P. ROBERTS, *Engineer.*
THOS. MCLOUGHLIN, *Asst. Engineer.*

Inspectors.

JOHN J. BANCROFT,
THOMAS E. LENNON,
ROBERT GARDNER, JR.,
WILLARD S. KNOWLTON, (resigned December 23d.)

GEORGE E. WORTHEN, *Special Inspector.*

FRANK LAPOINT, *Reservoir.*

Report of the Water Board.

OFFICE OF LOWELL WATER BOARD,
LOWELL, Jan. 12, 1891.

To the Honorable the City Council of the City of Lowell:

The Lowell Water Board herewith submits to your honorable body its annual report, being for the year 1890, and the eighteenth annual report.

As is customary, the report of the Superintendent of Water Works and that of the City Engineer, with pumping statistics, accompanies this report, and each will explain itself. We also call respectful attention to a recently prepared special report upon the condition of Merrimack river water at Lowell, by an eminent authority, and which we have thought judicious to bring to your notice at this time, in view of the seeming concern manifest among some portion of our citizens.

ORGANIZATION.

On March 10th, 1890, the Water Board consisting on that day of Arnold S. Welch, Watson A. Dickinson, (elected from the Board of Aldermen in January) Miles F. Brennan, John Stott and Arthur F. Salmon, organized in accordance with the city ordinance, choosing John Stott as President of the Board.

During the same session, Millard F. Wright was re-elected as Superintendent of Water Works.

Mr. Welch's term of office as member of the Water Board expired May 1st, 1890. The vacancy was filled by the election of Edward W. Thomas from the citizens, by concurrent vote of the City Council, his term of office to expire the second Monday of March, in the year 1894.

At a meeting of the board held June 2nd, the position of Clerk and Secretary of the Water Board was filled by the re-election of Charles L. Knapp.

VOLUME OF BUSINESS FOR YEAR 1890.

The Water Board of 1889 in the report to the City Council one year ago, stated that the volume of business of the Lowell Water Works as indicated by the gross charges, had reached practically $200,000, the figures for the year being $191,594.87. The year 1890 sees this high mark passed, and the volume of business more than $200,000. The charges for the twelve months were $203,865.27. This amount, with $16,397.55 of uncollected 1889

charges make a total asset amounting to $220,262.82. Bearing in mind that of this latter amount $15,611.07 are charges of the month of December, 1890, it will be admitted that from a business standpoint, the collections of the department have been well handled, when it is stated that the net receipts of the year 1890, have been $193,963.80.

The expenditures of the year, including interest charges amounting to $115,012.50, and expense of plate for new issue of bonds amounting to $1,022.36, amount to $194,108.32, as against $193,535.48 in 1889. This leaves the Water Works credited with a balance January 1, 1891, of $811.89.

The total expenditures on Water Works to January 1891 amounted to $4,841,227.27. The total receipts to same date amounted to $2,453,398.47, making net cost of Water Works to January 1, 1891, $2,387,828.80.

The expenditures of the year, exclusive of interest payment of $3,000 on note of December 3, 1885, and expense of bond plate, amount to $78,073.46. The receipts being $193,963.80, gives for receipts in excess of ordinary expenditures $115,890.34.

For details of charges, collections and expenditures, we respectfully refer you to a financial statement elsewhere, which is a portion of the report.

RECAPITULATION OF WORK.

The length of new water mains laid during the year was 12,775 feet, making the total length of

water mains in the city 486,631 feet, or 92.17 miles.

There have been relaid during the year 2,145 feet of mains.

The total number of hydrants for fire service is 854.

The department has expended during the year $6,344.04 for purchase of meters. During the year 292 new meters have been set, including private meters set inside of the first meter. Of this number 193 have been sold to consumers; 78 have been set to replace condemned meters, and at expense of the City; 8 have been sold for use as private meters; 13 have been set and are owned by the City. The total number of meters in use in Lowell today by which water is measured and charged for to consumers is 1935.

The number of consumers added to the list of water takers as indicated by new service pipes laid is 261, against 356 laid in 1889. The number of services relaid during the year is 268, against 239 in 1889. The total number of services now in use is 8340. Total number of services laid to date is 8732.

The total amount of water pumped during the year as shown by returns made by City Engineer Evans, was 1,961,902,570 U. S. gallons, against a total pumpage of 1,691,804,700 U. S. gallons in 1889. This work has been distributed between the two engines as follows: Morris 283 days, 1,490,296,960 gallons; Worthington 117 days, 471,605,790 gallons. A daily average pumpage (331 days), both engines,

of 5,927,199 gallons, against 4,654,259 in 1889. The daily average consumption was 5,373,536 gallons, or a daily average of 69.24 gallons per capita. The pumpage of the High Service system for the year was 27,283,060 gallons, against 22,342,320 in 1889.

The total consumption of coal was $2166\frac{1770}{2000}$ tons, against $1560\frac{1680}{2000}$ tons in 1889. The cost of pumping 1,000,000 gallons of water as returned by computation of Engineer Evans, was for the Worthington engine $8.19 as against $8.40 in 1889; for the Morris engine $7.23 as against $6.64 in 1889.

It will be noted at once that over 600 tons of coal has been consumed at the Pumping Station more than in 1889. The reasons of this are as follows:

1st. The Morris engine in 1889 pumped 96 per cent. of the entire pumpage of the year. During the year the Worthington engine ran but 21 days. During the past year the Worthington pumped 25 per cent. of the total pumpage, running 117 days, and in conjunction with Morris engine, portions of ten months of the year.

2nd. The increase in pumpage over 1889 has been, by the Engineer's returns 270,097,870 gallons.

3rd. The condition of the Morris engine became such, that owing to leakage of steam, it was finally compelled to stop and undergo extensive repairs. Several weeks previous to this it was run at the expense of a largely decreased efficiency.

4th. The most important cause that led to the

increased consumption of coal, was the results that followed the condition of the coal market during the latter part of 1889, when the coal used during the first six months of 1890 was housed. At this time all coal consumers were sorely perplexed with regard to coal supply. It was not a question of quality, but as to whether coal of any sort could be had. At one time the situation became so serious that arrangements were made with Daniel Gage for a provision of wood to burn under the boilers. Matters, however, did not reach that extreme, but the coal that brought relief was very poor in quality. Coal used at this time, Mr. Roberts states, was 55 per cent. poorer than that in the sheds today. It was so poor at times that all that could be brought out of a pound of coal was 380 gallons, against 580 gallons, the maximum raised with one pound of coal. While the Pumping Station was thus handicapped, Mr. Roberts' figures show that it required 2150 lbs. of coal to raise 1,000,000 gallons, while in 1889 1766 lbs. did the same amount of work. This is said without intention of reflecting upon local dealers, who did all in their power as second men, and who afterward made proper allowance for discrepancy in fulfilment of contract.

THE REFUNDING OF THE WATER LOAN.

By a special act of the Massachusetts legislature, approved April 8th, 1890, the City of Lowell was authorized to issue $1,000,000 in bonds, notes or

script, for the purpose of paying or refunding its water indebtedness, then outstanding.

Under this authority the City Council in October passed a resolution providing for the issuing of the entire $1,000,000 in $1000 4 per cent. 30–year coupon bonds, bearing date of November 1st, 1890. Six hundred of these bonds were immediately sold to Messrs. Barnard & Stanwood of Boston, Mass., the price being 105 3-4 and interest. From the proceeds ($634,772.23) of this sale, $600,000 was applied to the payment of the water loan bonds that matured November 1st, 1890. The balance ($34,772,23) is to be paid to the Commissioners of Sinking Funds, to be credited to the Sinking Funds for the payment of the new issue of $1,000,000 of bonds at maturity.

On November 1st, 1890, the whole amount of outstanding Water Loan, 6 per cent. coupon bonds ($1,300,000) issued at different times during and after 1870, became payable. The payment was met by the $600,000 previously alluded to (proceeds of sale of new 4 per cent. bonds) and $709,073.37 received from the Commissioners of Sinking Funds, the same being the full amount standing to the credit of the Water Loan Sinking Fund, November 1st, 1890. This will leave in the Treasury, after all the bonds have been paid, the sum of $9,073.37, which is applicable to the payment of water loan indebtedness maturing in the future.

The payment and refunding of the water loan in-

debtedness, thus far accomplished, has wiped out $700,000 of indebtedness, that has been paying 6 per cent. per annum, besides substituting for an additional $600,000 bearing interest at 6 per cent. per annum, an equal amount bearing interest at 4 per cent. per annum. The reduction in interest charges to the Water Department is indicated as follows:

Annual interest charges before refunding.....	$1.300,000 at 6 per cent.	$ 78 000
Annual interest charges after refunding.....	600,000 at 4 per cent.	24,000
Saving in interest charges annually.....		$ 54,000

The work of refunding will continue as the Water Loan indebtedness becomes due from time to time, until the year 1894, when the last note effected by this refunding plan, will mature.

While upon the subject of the water loan indebtedness of the City, we may say that the final annual payment of $3,000 was made during the year upon the temporary loan of $15,000, created in 1885 for repairs at the Beacon Street Reservoir, necessitated by the sliding of the paving during that year. This loan disappearing, there remains due from the City of Lowell on Water Loan, December 31st, 1890, as follows:

Date of Notes and Bonds.	To whom Payable.	Amount.	Per Cent.	Security.	Interest when due.	Annual Interest.	Note and Bonds when due.
1871 May 1	Lowell Inst. for Sav.	$ 200,000	6	City's Note	May 1, Nov. 1	$12,000	1891 May 1
1873 June 14	Lowell Inst. for Sav.	100,000	6 6-10	City's Note	June 14, Dec. 14	6,600	1893 June 14
1874 Oct. 14	City Inst. for Sav.	50,000	6 1-2	City's Note	April 14, Oct. 14	3,250	1894 Oct. 14
1874 Nov. 12	Lowell Inst. for Sav.	100,000	6 1-2	City's Note	May 12, Nov. 12	6,500	1894 Nov. 12
1881 Nov. 1	Blake Bros. & Co. 15 Notes	75,000	4	City's Note	May 1, Nov. 1	3,000	1911 Nov. 1
1890 Nov. 1	Barnard & Stanwood	600,000	4	City's Note	May 1, Nov. 1	24,000	1920 Nov. 1
		$1,125,000				$55,350	

THE WATER DEBT.

January 1, 1891, the gross debt on account of the Water Works amounted to $1,125,000.* The sinking funds January 1st, 1891, amounted to $53,873.80, making the bonded indebtedness (net) of the City on account of Water Works December 31st, 1890, $1,071,126.20.

---

* It will be noticed that the Water Works statement of "gross debt" is $86,000 less than figures as furnished by City Auditor for His Honor the Mayor's annual address. By that statement the gross debt appears as $1,211,000, which less the sinking funds, $53 873.80, gives for net indebtedness $1,157,126.20. As a matter of fact the gross debt is $1,125,000, and the net debt $1,071,126.20. The $86,000 difference is the amount of uncalled bonds bearing date of November 1st, 1890, and to meet which funds are now in the City Treasurer's hands, awaiting presentation of over-due bonds. Plainly as the $86.000 has been charged off against the Water Works, it should not appear as present indebtedness. The point is so clear it must be understood at once.

FAMILY AND METER RATES.

In the Water Board report for the year 1889, was printed a schedule showing the rates paid by thirty-three of the principal cities of the country. It was printed to show that, notwithstanding a cry often heard in Lowell regarding excessively high water charges, the rates charged are reasonable when compared with those of other cities. The subject may be considered futher with profit by all citizens, and especially by members of the City Council, upon whom will fall the responsibility of any lessening of charges in the future, and who should before action be possessed of the fullest information of whatever bears upon the subject.

In the Manual of American Water Works will be found tables wherein are computed the family and meter rates of 800 cities in the United States and Canada, including private as well as public works. It will be of the utmost interest to every citizen to know just where the City of Lowell ranks in this list of cities.

First, as to the manner of comparison employed in the computation referred to. The price charged for family rate, pan closet, bath-tub, wash bowl, horse and carriage with use of hose, cow, hose, for each of the cities is taken, the aggregate of the above giving a "total for family," being considered the ordinary fixtures of a well-equipped house. As enumerated above, Lowell under existing rates would

furnish, family $6, closet $4, bath-tub $3, bowl 0, horse and carriage, etc. $4, cow $2, hose $3, with a total of $22.00.

Under such comparison of rates of different cities, it will be learned from the authority quoted, that the average total family rate charged for water taken from 748 works in the United States is $26.88. For the public works of the New England states the average rate upon above basis is $20.95, while the average for the works of the state of Massachusetts is $24.74. It is shown further that the rates for private are greater than those for public works, ranging from $4.70 greater in the New England states to $20.64 in the Pacific states.

As concerns the comparative charges in the cities of the country for metered water: The charge in Lowell is 15 cents per 100 cubic feet or 20.20 cents per 1000 gallons. In Boston the charge is a trifle less than 19 cents per 1000 gallons, Brockton 30 1-5 cents, Clinton 50 cents, Fall River 30 cents, Fitchburg 35 cents, Lynn 20 cents, Malden 25 1-4 cents, Marlboro 50 cents, New Bedford 15 1-4 cents, Salem 20 cents, So. Framingham 40 cents, Taunton 26 cents, Worcester 25 cents, Lawrence 17 1-2 cents, Concord, N. H. 25 cents, Manchester 20 cents, Nashua 30 cents, Burlington, Vt. 40 cents, Providence, R. I. 30 cents, Hartford, Ct. 30 cents, New Haven 30 cents.

It is more difficult to draw comparisons on meter charges than on rate charges, owing to the wide

difference in method of levying charges. For instance, there is a wide difference in the number of gallons upon which the maximum and minimum charges are based in the various municipalities. Sometimes the maximum price is for a consumption of 50 gallons a day, and again for several thousand gallons. Again, while many cities give a schedule meter rate, many have a sliding scale, that is, for large consumptions they make special prices.

Dividing the States and Canada into groups, the meter rates range as follows:

New England	from	30.14	cents per	1000 gals.	to	14.85 cents.
Middle States	"	23.45	"	"		12.53 cents.
So. Atlantic	"	33.45	"	"		14 62 cents.
North West	"	45.79	"	"		22.66 cents.
South West	"	54.30	"	"		25.26 cents.
Pacific	"	40.48	"	"		24.81 cents.
United States	"	36.71	"	"		19.05 cents.
Canada	"	44.62	"	"		20.18 cents.

The above figures are not the average of all the meter rates in the states included, but are obtained by dividing the sum of the average of each state, by the number of the states or provinces.

The attempt is not made here to show that Lowell's charges are light, but they are fair at least, compared with other cities. It may be said, too, that the rate figures given are against Lowell's showing, inasmuch as they are based upon a "family of five," whereas Lowell actually allows six persons to a "family."

It has been said that no attempt is made to indicate that Lowell charges are low. For a low rate may be mentioned that of Pineville, Ky., $3.25 for a single family, the lowest in fact, in the country, while its opposite, the highest, is $94.20 at San Angelo, Texas. At least twenty cities and villages having public works are below $15. Washington, D. C., the total family charge is but $7.25; Elgin, Ill., $10., Allegan, Mich., $10.50, Minerva, Ohio, $12. —family charge in these cases being understood to carry fixtures enumerated in the American Water Works Manual, and having no connection with what we know in Lowell as the "$6.00 family rate."

Viewing these figures, a reasonable mind will admit, that certainly under like conditions, our Lowell charges will stand a favorable comparison with other communities.

The Water Board were invited by a committee of the City Council of 1890, whose duty was to report upon "revision of the city ordinance," to suggest needed changes in that portion of the ordinance relating to Water Works. Such suggestions have been made. The principal changes recommended, and those of most interest to consumers, are that the minimum charge for metered water be reduced from $12.00 to $10.50, placing the limit of consumption at 7000 cubic feet, which as now is 8000 cubic feet. This recommendation is made that the use of meters may be encouraged. The Board also recommended what in their mind is of most

essential interest to the City, that of making it compulsory for certain classes of property to use water under meter rates. The present system of rates is no more nor less than guess work on certain classes of property, is entirely unbusiness like, unjust to the City, and therefore an imposition upon tax-payers in general. Another recommendation is to do away with the present classification of horse charges. Why should you pay a $4.00 charge upon your own horse, while a hack horse, truck horse or horse-railroad horse is charged $1.50? The Board recommend that the ordinance be so changed that all horses be charged alike, $2.00. Further in this connection, that for $3.00, the present charge, a consumer be allowed the use of hose for carriage washing as well as for other use. Such intricacies as the above, create much ill-feeling among consumers from a sense of lack of justice in the charge, but which the department is compelled to exact under the terms of the ordinance, as it reads to-day. Your honorable body will consider, should our recommendations reach you during your administration, that the department is now self-sustaining, and if it is possible, by what are really slight changes, that the basis of rate charges can be made in any way more equitable, such changes should not be delayed when the opportunity for modification presents itself. The rates, while as a whole are fair, can be modified to some extent, without materially lessening the income of the Water Works, and by

so doing, create a more satisfactory feeling among the tax-payers in general. As we have said, should the matter be brought to your attention during the year, we sincerely hope our recommendations, some of which have been mentioned, will receive thoughtful consideration.

NEW ENGINE—CONDUIT—FORCE MAINS.

During the year past, the Water Board in a communication to the City Council, called the attention of that body to the urgent necessity of providing additional pumping machinery. The communication was referred to a joint special committee. The committee saw fit to consult with Mr. E. D. Leavitt of Cambridgeport, whose opinion expressed in the committee's official report was "that the City ought to have another pumping engine of ten million of gallons capacity as soon as it can be obtained." The report further reads, in consideration of the above opinion of Mr. Leavitt, and the urgency of the needs as set forth in the communication of the Water Board, it is recommended that a new pumping engine be contracted for as early as possible; for that purpose the committee introduced a resolution to borrow $60,000, for a term of ten years; the principal sum so borrowed to be paid in ten equal payments from the income of the Water Department.

The resolution passed both branches of the City Council in due course of time, after which the

Water Board commenced upon its responsible duty. The preliminary work was placed in the hands of a committee consisting of President John Stott, Miles F. Brennan and Edward W. Thomas. Under advisement with George H. Barrus, M. E., of Boston, Mass., the usual forms accompanying an advertisement for proposal were prepared and have been issued to the builders of pumping machinery of the country. The advertisement calls for sealed proposals to be received at the office of the Lowell Water Works, City Hall, until 2 P. M., on Friday, January 16, 1891, for the construction, delivery and erection of a ten million gallon steam pumping engine, at which time they will be publicly opened and read.

By the terms of the specifications, the new engine must be erected and fully in service within nine months from date of signing contract, and the contractor must keep it in good working order for a period of one year. The engine is to be capable of delivering from the pump well to the reservoir 10,000,000 U. S. gallons of water in twenty-four hours, and must be further capable of working to twenty per cent. higher capacity without undue strain or danger of injury to the mechanism. Within two months after the engine is set to work, it is to be subjected to a duty trial test, when it must be shown capable of performing a duty of at least 70,000,000 foot pounds. Should the duty developed by the engine fail at the trial to develop the guaranteed duty stated in contractor's pro-

posal, then there shall be deducted from the agreed price of the engine the sum of $500 for each 1,000,000 foot pounds or fraction thereof, short of said guarantee, provided, however, that should the duty shown by trial be less than the guaranteed duty by more than 10,000,000 foot pounds, then and in that case the engine shall be rejected. If rejected, the City is to be allowed the free use of the engine one year, or until other pumping machinery can be procured in place of the rejected engine. The payment for the engine will be made as follows: Twenty-five per cent. of the contract price will be made on or about the tenth day of the month, next succeeding the time of delivery of the materials of the engine at the Pumping Station, and fifty per cent. will be paid on or about the tenth of the month next succeeding the time when said engine is so far completed as to be set to work. The balance is to be paid contractor within sixty days after the superintending engineer shall have certified to the Water Board that the prescribed duty test has been made and that all work has been completed in accordance with terms of agreement.

It is the judgment of the Water Board that the proper location for the new engine is beside the 5,000,000 Worthington. This will necessitate the enlargement of the present engine room, which can be accomplished by extending the main building on its front, and toward West Sixth street. This work

and the building of the engine foundation will be done by the City, and will be commenced in the spring as soon as weather will permit.

The erection of an additional engine to the Water Works plant will necessitate the immediate providing of increased pump-well capacity, as well as increased facilities for discharge into the reservoir. At the present time the pump-wells are supplied water through a 30-inch main, extending from the end of the tunnel at the Bodwell gate house, to the Pumping Station, a distance of about 6,630 feet, and which is capable of delivering to the pump-wells 9,000,000 gallons per day. The conduit, up to the point where it delivers its water to the 30-inch main, has a capacity, when running full, of 13,000,000 gallons in twenty-four hours. To obtain the full benefit of the conduit's delivery, it is proposed to duplicate the present 6,630 feet of 30-inch main. This should be done during 1891. The cost of this work, City Engineer Evans estimates will be $49,850.

The discharge or force-main from Pumping Station to Reservoir, is now a 24-inch pipe. As for its capacity, we need only say, it cannot take care of the discharge of water at the present time when both Morris and Worthington engines are at work. At such times, a portion of the water is forced directly into the city mains through the Bridge Street force-main. Plainly then, must the Reservoir force-main be re-inforced. The length of

this distance is 2,515 feet, and Mr. Evans estimates that it will cost $16,850 to parallel the present 24-inch pipe with a pipe of the same size. Mr. Evans' total estimates are then seen to be about $67,000. The Water Board are of the opinion the estimates are high, and that the Department can do the work for less money. They believe, moreover, that when the second reservoir main is laid, and the work should not be delayed longer than 1892, it should be a 30-inch main, connected by branches with the present 24-inch main, in four or more places during its ascent of the hill.

These are two heavy pieces of work, and it may be advisable to contract the same, although the present equipment of the Water Department would warrant its undertaking by our own forces. The cost of the work will be easily met by the income from Water Works if its earning power is not disturbed. The work done, the Works will have a capacity for delivering double the present maximum daily consumption, and that without undue effort or strain upon its machinery.

RE—ORGANIZATION OF WORKING PLANT.

The good accomplished by the City Council of 1888, when, by an amendment to the ordinance, it was provided that of the four citizen members of the Water Board, one only should be retired each year, cannot be over-estimated. As now, the Board at the commencement of a year is certain of the

services of three, at least, members who are familiar with the work of the department. The needs of re-organization are no more evident to-day than in former years; but formerly the term of office was so brief, that admitted needed changes were not always put into effect. By the time a member became interested, by his acquaintance with the work, too often was it the case, through political influences perhaps, that the department was deprived of his valuable services. Thus many times have meditated and needed changes been necessarily postponed. As now, the work laid out or commenced by a Water Board one year, can be carried to completion the following year. The wisdom of such a change, from a business standpoint, at least, must be evident to all citizens who believe in sound business methods being employed in the business of the various departments of the city.

This leads the way for us to speak of the prospective changes in the working plant of the Water Department. After mature deliberation, it has been decided that the Water Works business can be carried on with better results and more economy, by abandoning the shop, store-room and stable, located on Broadway, and moving the same to the Pumping Station land on West Sixth Street.

First as regards the shop. The matter of repairs to various portions of the Water Works equipment, is fast becoming a large item of its yearly business. The shop on Broadway is hardly more than a

country blacksmith's stand, being without power and other much called for every-day methods for doing work quickly and economically. There is, it is true, what has for years been styled a machine shop at the Pumping Station, designed to do necessary small jobs in the line of repairs to the engine, and in recent years it has been put to service to some extent in the way of meter repairs. The meter repairing and cleaning work, however, has become so extensive a part of the yearly work, as to have entirely outgrown the accommodation afforded at the Broadway shop, and being transferred to the Pumping Station, could not be accommodated in the machine shop, owing to the latter's narrow limits; a temporary arrangement was of necessity provided in the basement, not a fit work-room by any means, but the best at hand. Bad as it is, the results obtained make it evident that the transfer was made none too soon.

Second, better accommodations are needed for store-room purposes. It will be readily understood that the department is obliged to carry in stock, an innumerable list of fittings, pipe, tools, etc. With the present arrangement, the manner of conducting the business is loose, as a glance at the premises will indicate. The stable is a comfortable place for a horse to eat and sleep, that is all, and is far from being a credit to the city of Lowell.

Third, there is no business man in the city who

would divide his work or his help, could he avoid it. He would have all on one spot under his watchful eye, or that of his superintendent.

To sum up the situation then: the Board have to say, that the Water Works business has outgrown its present accommodations on Broadway, particularly its work-shop and store-room. The department needs new buildings to properly conduct its work. Is it wise to rebuild on Broadway? The Water Board say, no! The proper thing to do, is to move everything to West Sixth Street, where all can be accommodated, excepting space for the storage of large pipe. This the Water Board has voted to do. The lot of land on which stands the Pumping Station and coal sheds, fronting on West Sixth Street, and sided by Hampshire and Jewett Streets, is nearly a square lot; being 200 feet on the front by 205 feet deep; from the rear line of the premises to the nearest building on the lot is a distance of 60 feet, thus affording building space 60 by 200 feet. Here it is proposed to build a work-shop, a stable and storage sheds. The stable will corner on Jewett Street, the work-shop will corner on Hampshire Street, and the sheds will extend between the two new buildings.

The work will be done under the direction of the Lands and Buildings department, and the Lands and Buildings Committee have approved the plans and specifications submitted them by the Water Board. The buildings will be of brick with slated

roofs. The stable will be two stories, with hipped roof, and will be provided with seven stalls, beside a box-stall. It will be properly drained and ventilated, and will be, all in all, as a stable should be. The shop and store-room will be a two story structure with hipped roof. It will be sufficiently heavily timbered to accommodate running machinery, and will be abundantly lighted. It will be furnished with power, be provided with an elevator, and its working rooms will be 12 feet high in the clear. The outside measurement of the building will be 40 x 50 feet. It will contain a stock room. Material will have its proper place. Stock-room books will be kept, and every bolt, union, foot of pipe or other fixture that is purchased, will be accounted for by one held responsible. So with the machine shop. It will be run as every other well regulated machine shop in the land. You cannot expect workmen's best returns, without they have tools and proper accommodations to do work. The Water Works of Lowell are without the proper facilities today for doing its work with proper economy. Our purpose is to provide such means. In our judgment the improvement will prove a wise use of money, an investment for the city of Lowell. It is what any corporation or private concern handling a yearly business of the size and importance of the Lowell Water Works, would have done years ago. The work will be commenced the coming spring, as soon as condition of the ground will permit.

The pipe yard will remain on Broadway for the present. If an opportunity is afforded whereby territory accompanied with railroad facilities can be secured for the storage of heavy pipe, such a place will be secured for the Water Works. The saving in teaming and handling of heavy pipe would be a large item. The latter plan accomplished, the Water Works would release the entire Broadway yard to the city for other uses.

METER DEPARTMENT.

A special effort has been made the past year to improve the condition of meters set previous to 1882. The evidence of the meter accounts, pointed strongly to the fact that in many instances meters that had been in use for ten years or more, were not registering the full amount of water consumed. With the determination to improve the situation, one additional man was employed a portion of the year, upon the work of cleaning meters, and an expert machinist was also added to the force, and a portion of his time employed upon meter repairs. A large portion of the Worthington meters throughout the city have been taken out and cleaned, and when needed have been repaired. This meter, whose inner parts are of iron, particularly the smaller sizes, is unsuited for Merrimack River water, on account of the deposit which the water causes when in contact with iron. The number of Worthingtons removed, cleaned and reset was 333. The

Desper meter, one of the earliest introduced in Lowell, in many cases is found worn out and not infrequently beyond repair. Of this pattern, 70 have been condemned and replaced by new meters at the City's expense, beside 2 Worthington, 5 Ball & Fitts and 1 Duplex. Four hundred and ninty-eight meters were taken out, cleaned, replaced by new ones or repaired, tested and replaced.

It is yet early to speculate upon the profitable result of this work. Naturally results will depend upon the thoroughness with which the work shall prove to have been performed. An outcome of the work has led to the adoption of a systematic record of all meter repairs, capable of showing at any time the full history of a meter subsequent to setting, including statement of troubles and repairs, together with cost of maintenance. Had records of this sort been adopted years ago, the information furnished would be of the greatest value to-day, showing comparative merit of meters after continued use; a very substantial argument as to merit, and a much safer recommendation to purchase meters upon, than the oratorical powers of an individual employed to sell meters.

It will be understood why it is that this particular branch of the Water Works business is sure to increase in importance with each year. The holding old meters up to proper efficiency is a very important feature of the work. Future Water Boards will have abundant reason to admit the

truth of these words. The present Water Board's duty, however, is to meet the trouble as found to-day. This they have done, and are doing, to the best of their ability.

THE WATER WORKS FIRE SERVICE.

The City (Fire Department) paid to the Water Department in 1890, for 823 hydrants at $12, $9876. The statement was made upon the Aldermanic floor during the past year, that Lowell is the only city in New England where this charge for fire service is exacted. As the statement was not contradicted, it is but fair to state that the foregoing statement was not based upon fact. The City of Dover, N. H., paid in 1889 $30 each for 150 hydrants; Fitchburg, $50 for 268 hydrants; Augusta, $25 for 80; Concord, $30 for 192; Providence, $30 for 1304; Hartford, $20 for 488; Springfield, $20 for 557; Boston, $18 for 5377; Manchester, $40 for 425; Newton, $20 for 566. Lawrence pays by appropriation, as does Taunton and New Haven.

Lowell, prior to 1888, paid $20 per hydrant, the reduction of $8 in that year reducing the income of the Water Department, $6,084. It is well that these facts should be known, that members of the City Council may deal intelligently with future, short sighted efforts to financially cripple a well-doing department by ruthless inroads upon its income.

Lowell to-day has an excellent fire supply of water

in connection with its general fire service. Let us show this degree of excellence, under especially favorable circumstances: Presumably it is known that there are two water main systems in the city, that of the City Water Works, and that of the Locks and Canals Company. It may also be known that the two systems can be connected, so as to give the Locks and Canals system the benefit of the Water Works reservoir, through check valves opening toward the Locks and Canals system.

During the summer of 1890, under the personal supervision of Colonel James Francis, the Proprietors of the Locks and Canals made extensive experiments on the discharge of hydrants, and the capacity of the main pipes in some of the mill yards of Lowell manufacturing companies. On the afternoon of August 2nd, the trial of the City system in connection with the pipes in the yard of the Merrimack Company was made, the Locks and Canals reservoir being entirely shut off during the trial. The following was the result:

	Pressure guage. Lbs. per square inch.	Loss of pressure. Lbs. per square inch.	Discharge of one hydrant by experiment at nearly the level of the pressure guage. U. S. Gallons per minute.
Pressure in the main when no hydrants were open	72	..	...
Five hydrants open	70 1-2	1 1-2	187
Nine hydrants open	70	2	187
Fourteen hydrants open	68	4	187
Nineteen hydrants open	66	6	...
Twenty-three hydrants open	65	7	182
Twenty-seven hydrants open	63	9	177

In the above trial a 50-foot length of hose, of leather or of cotton, rubber-lined, was attached to each hydrant except one, where the length was 25 feet. The nozzles were smooth bored and measured very nearly one inch in diameter at the point of final discharge. Besides the 27 hydrants used, three more were in use a portion of the time, becoming incapacitated by bursting of hose. All of which goes to show that the water end of the Lowell fire-fighting problem is all right. But are the facilities for making use of the water at best advantage? This question will apply to the city in general, and as it is a matter of paramount importance, it would be well to devote serious thought to the subject.

At the outset it may be said that the Lowell Water Board are mindful of the fact that the effi-

ciency of the Lowell fire service is a matter resting upon other shoulders, and it is with no desire to interfere with the duties of others, that the subject is entered upon, at the present time.

What follows as to views concerning the betterment of the fire service, is intended to apply entirely to the centre of the city, or within the present fire district. We believe that the inlet to the hydrants in this district should be not less than six-inch. No one, we think, will claim that more than four good streams can be expected from a six-inch main. There are hydrants with four-inch inlets, i. e. hydrants with valves of four-inch opening, at the centre of, and throughout the city. Another suggestion, in the form of a query: Are not our hydrants, in the fire district, too far apart? It has been truly said that hydrants are cheaper than hose, and will last longer than hose with less care. Furthermore, better results are obtained with short lines of hose. The friction in the hose overcomes pressure, and the effectiveness to a large extent is lost. The cost of a hydrant, when life is considered with the life of a hose, favors the hydrant. They cost money, and because they are not used, they may seem useless at many points. In fact it has been stated that the Water Department is paid for hydrants "that are never used"; but where within the city limits is there a single one that may not be called upon at any moment? Can one be mentioned that property owners would discard?

Edwin Darling, the competent superintendent of the Pawtucket, R. I., Water Works says:

"The hydrant is looked upon by some as a useless thing because it is not used, or in other words, because we do not have fires. We have on our works hundreds of hydrants that have never been opened for fire purposes in the last ten years, and yet I would not know where to discard one; in fact we do not wish to use them until we have a fire, and then they are wanted very badly. We never want a fire; it is like the insurance on our houses; we pay, but we do not want them to burn. I remember a few years ago some of our citizens said we did not use them and therefore ought not to pay for them. About that time we had a large lumber yard on fire; it was a very dry season and the wind was blowing in a direction which carried the sparks over the business part of the city. At one time the roofs of sixty buildings were on fire. The hydrants were brought into service, playing fifty-two streams in that location, and in connection with the sill cocks, which nearly every house has for a garden hose, a conflagration was prevented which might have cost a million dollars. These same people admitted after that, that there were no useless hydrants in the city."

To sum up the whole matter, could any wiser use of city money be made today than the setting of at least 100 additional hydrants of modern construction within the limits of the fire district? The Water Board believe not. But it is not the province of the Water Board, particularly with the prevailing opinion which exists in certain quarters, to take the initiatory steps. Be it said however, that any request of that or other nature, whose object is the betterment of the fire service, and coming from the source it should, will receive hearty co-operation. All hydrants should be tested at least twice each year.

During the year the Water Department has caused Lowry hydrants to be placed at either end of Palmer Street, at intersection of Central and Church Streets, at Mechanics Mills, also at the request of the Tremont and Suffolk Mills, on Suffolk Street, and at the request of the Merrimack Manufacturing Company, one on Dutton Street and one on Prince Street. These with two previously set, one at the corner of Bridge and Merrimack Streets, and one at the corner of Market and Central Streets, make nine Lowry hydrants in position to date.

The Water Department decided to locate these hydrants, after a controversy which is still fresh in the public mind, and which, so far as the merits of the hydrant are concerned, should have been settled by the result of a public trial April 3rd, 1890. This test was thoroughly an official one. It was ordered by His Honor, Mayor Palmer, and was conducted under the direction of a committee of especial fitness. The finding of that committee was printed at the time in detail. Concluding, the report says:

"From the results obtained the committee are therefore of opinion that it would be wise to add Lowry hydrants as a reserve, to the fire equipment of the city, at such points as seem by the character of the building, or the nature of the business carried on, most dangerous.

It has been objected to the Lowry hydrant that its capacity to deliver water is so great as to possibly reduce the pressure throughout the system of mains in the location where they are used.

This seems to the committee an objection of little import-

ance, as the amount taken by the Lowry hydrant would at all times be subject to the control of the chief engineer, who could thus prevent the reduction of pressure at adjacent hydrants, if the condition of the fire made that of importance. On the other hand, the ability to concentrate twelve streams at a given point might at times be of inestimable value.

One of the main objects of our water supply is the extinguishment of fire, and the device that permits the transfer of the greatest quantity from the mains to the spot where it is needed, in the least time must, in time of emergency, be the most valuable.

The Committee call particular attention to the fact that it is for reserve apparatus, and not for general use, that they recommend the Lowry hydrant.

For the ordinary use of the department, the greater rapidity obtainable with the post hydrant would probably render its use more desirable.

If the connections between the four-way flush hydrants and the city mains were made, in the future, with 8-inch pipe instead of 6-inch as at present, the committee are of opinion that their value would be much increased.

The guages used during the trials the Committee have had tested, and they were found accurate."

This report received the signatures of the entire Committee, Messrs. Joseph S. Ludlam, James Francis, Edward D. Holden and Edward W. Thomas.

We have never heard other than favorable comment from the citizens of Lowell, upon the action of adopting the hydrant, and are pleased to know that there are corporations in this city, whose officials witnessed the test, that will put the Lowry in service in their mill yards, if they have not done so already.

The Board takes pardonable pride in having corrected during the year a neglect that has existed in that section of the city known as Little Canada.

This locality has for years taken its supply from the same source that supplies the Boott, Merrimack and Tremont & Suffolk Companies, a 20-inch main which leaves the 24-inch main on East Merrimack Street, at Canal Street, running through the territory of the above corporations, parallel with the river, through Hall Street as far as Cabot Street, which street it turns into, and runs up and west through Cabot Street, under the Northern Canal and finally joins the 10-inch main of Moody Street. We are told that immediately following the laying of the main under the canal, which was done in connection with the laying of the Cabot Street sewer, and which was not done by Water Works workmen, it was discovered that the water main at this point leaked badly. This condition of things discovered, a gate on each side of the canal was closed shutting off the water from the faulty pipe, and the matter was allowed to rest without further investigation and repairs. This state of affairs placed Little Canada in this position so far as its water was concerned: Its supply was drawn through Hall Street from Cabot Street by an 8-inch main tapping the 20-inch main before mentioned. From this 8-inch main the cross streets and Cheever Street of Little Canada were furnished through 4-inch pipes. On these 4-inch pipes were less than one half dozen hydrants. Realizing the inflammable construction of this section, its always crowded state, a condition of things one can hardly appreciate

without having made personal inspection, the Board were astounded when upon personal examination they learned the means at hand for fighting fire. What might have occurred in Little Canada by means of a large fire previous to 1890, had that large fire been in progress with the Northern Canal empty of its water, it is not pleasant to contemplate. The fire hydrants in the narrow streets drawing on the Hall Street 8-inch pipe as the sole source of supply, and such circumstance as a hot and spreading fire, would have been as nothing. The efforts of brave and willing men would have been of little avail to check a sweeping destruction through the entire territory north of the canal. When one contemplates what might have resulted in loss of human lives, what the reflection would have been forever after upon the authorities of the City of Lowell, what must have been the inevitable had a fire occurred under certain conditions — he can but shudder, as he wonders how was it possible that such a condition of things could have been allowed to exist.

We say then, that it is with pride that the Board can say that not only have the Little Canada cross streets been replaced by larger mains provided with powerful hydrants, but further, the old break in the 20-inch main under the canal has been made good, so that in case of a heavy draught of water in Little Canada or upon the neighboring corporations this 20-inch main will now pour its torrent of sup-

ply from the Ward Five end of the city. Furthermore, the Pawtucket Street main has been extended and united with the Little Canada system, so that to-day the section has three sources of supply. Come what may in the future, so long as the reservoir contains water, rest assured there is an abundance of water in Little Canada whether there is water in the canal or not.

There are other points where the fire service of the city, so far as the water fixtures are concerned at least, can be improved. There are flush hydrants that should be replaced by post hydrants. There are post hydrants that should be replaced by those of more power and modern construction. Supply inlet pipes of 4-inch size, and there are ever so many of them, are utterly wrong, and should be replaced by those of 6-inch size at least. You will note that in the opinion of the Lowry Hydrant Committee, even a 6-inch is too small for a large hydrant as witness: "If the connections between the four-way flush hydrants and the city mains were made, in the future, with 8-inch pipe instead of 6-inch as at present, the Committee are of opinion that their value would be much increased."

These matters are of utmost importance and should be seriously treated. The matter should not be allowed to await the lessons taught by a conflagration. We should be alive to improvements that can be made, and profit by the experience of other cities about us, who have been far less fortunate than ourselves.

FILTRATION.

Filtration of the city water by artificial means has been further considered by the Board during the year. The subject, a new one to some extent to two of the members, remains as last year. Other matters particularly those connected with the proposed new engine purchase and locating, have for the time being supplanted it in importance of immediate attention. Plans for a filtration plant, designed to be located in the vicinity of the present filter basin on Water Works land above Pawtucket Falls, with a guaranteed filtration capacity of ten million gallons each twenty-four hours, have been submitted, and are held for further consideration. The scheme is that known as the Morison-Allen Patent Gravity Purifier manufactured under the Jewell patents. The device would require not less than 12 tanks constructed of cedar, each tank to be twelve feet in diameter, and sixteen feet high. The plan as submitted would also require a small pumping plant requiring fifty horse steam power, which with other appurtenances would require to be housed in a substantial structure.

It may be said that the parties who offer to build the plant are quoted as in every way responsible from a business man's standpoint, and that after the completion of the plant would turn the same over to the city, to be operated under contractor's instructions for a period of one year,

during which time contractor guarantees the following results:

1st. That the filtered water shall be clear, bright, practically free from suspended matter, and suitable in all particulars for domestic purposes.

2nd. That the capacity of the plants shall be not less respectively (there are two sizes proposed for consideration) than ten million or eight million gallons per day of twenty-four hours.

3rd. That the quartz filter bed will not have to be renewed and will be kept permanently clear.

4th. That during the above period of one year, all changes and repairs caused by fault or neglect in construction shall be attended to at expense of contractor.

The full drawings for such a plant as above are in the hands of the Water Department, and can be examined at any time by any member of the city council or interested citizen. The Board witnessed the work of a recently completed plant of Morison-Allen method at the Sayles Bleacheries at Saylesville, R. I., and through the courtesy of Messrs. W. F. and F. C. Sayles, learned much to the credit of the process, although a more extended time of trial will be desired before arriving at final conclusions as to merit, and for this reason further results are awaited with interest.

Whenever, if ever, a Water Board shall recommend to the city council of Lowell the expenditure of the necessarily large sum of money that will be

required to build a filter plant capable of delivering to the city its daily supply of water, it will be at such time as public sentiment endorses the action. Such a condition of the public mind will exist when the quality of the water arouses suspicion, and when reasonable assurance can be vouchsafed for a means of its purification. It cannot be said that such a condition of water does exist to-day, neither can it truthfully be said that the science of filtration of water in large quantities is sufficiently advanced to warrant a moderately conservative man in a very positive declaration upon the subject. But the day will come when Merrimack River water will need undergo some treatment before it is universally used as it is to-day; when its quality will not admit of its present manner of taking from the river. These are prophetic words. It is well, then, for the popular mind to educate itself, and to be fully awake to the present condition of things and the possible dangers of the future. We may be pardoned then, if in the effort to bring our citizens to a realization of the situation, present and future, we quote lines of an article printed in the Engineering News and upon the subject of Mechanical Filtration of Water.

"In the earlier history of the water supply of towns in this country the chief problems were those of pumps, reservoirs and distribution. Water, pure and undefiled, was plentiful and near at hand, in what was then believed to be unbounded volume, far in excess of all possible "present and future" demands. Our rivers and smaller streams were as yet uncontaminated by sewage, as we now know it; great factories had hardly yet commenced to pour their filth into

them, their banks were too thinly settled to make agriculture objectionable and the wastes of colleries, of oil distribution, and the thousand and one other sources of pollution, to-day so common, were practically unknown scarcely a generation ago. Good water flowed by our doors then, and the engineer had but to lead it into a pump well, lift it to a reservoir, and distribute it to consumers.

All this has changed, most radically. In 1840 there were but 49 public supplies of water in the whole United States, and but two in all Canada. To-day there are over 1,900 water works in the United States, and over 100 in Canada, and the total capital invested in them exceeds $500,000,000, an aggregate of value in public works of a civil nature only second to our railway interests. At the date first mentioned our total population was only 17,069,453; to-day it may somewhat exceed 65,000,000.

As a consequence of this phenomenal growth, the rapid spread of population, the enormous increase in manufactures and industries of all kinds, and the almost universal demand for the luxuries as well as the necessaries of life, resulting from a higher civilization and a more liberal distribution of wealth, the multiplication of water works has about kept pace with our advance in other directions. But some vigorous "spurting" was necessary in several years to "catch-up" on the race, as notably in 1884, when 106 separate works were built, and in 1888, when the number of new works was 259.

While the ever growing demand for efficient and economical machinery and appliances connected with water pumping and distribution has been well met by manufacturers, and our engineers have introduced many novelties and constantly better work into the larger supplies, the chief problem that now engages the attention of communities and engineers is not so much the distribution of water as it is one of securing any pure supply at all, without seeking it at a distance that often is prohibitory in cost. Water is just as abundant and near at hand as it was 50 years ago; but the very conveniences that a water supply make possible, the improved and extended sewerage and the paving and draining of our streets into the surrounding water courses, have often rendered the old supply absolutely unfit for domestic, and even for manufacturing use.

In this ever extending search for potable water, especially in cases where the town cannot afford the cost of long aqueducts

and heavy machinery, many streams are rejected owing to the presence of earthy and other impurities that could be removed by filtration. For some reason, which we cannot explain, hydraulic engineers seem to look askance at the artificial purification of water, and from the standpoint of 20 years ago we cannot blame them. The Chelsea system of sand filter-beds, though extensively used abroad, is costly in its first installment expensive to keep in operation and under certain conditions is of more than doubtful efficiency in removing the class of organic impurities most dangerous to health. Late experiments in Berlin show that under any forcing system bacteria pass through sand filters almost as readily as if the sand was not there, and only the earthy matter, apparent to the eye but least dangerous to the consumer, is removed. Any system of this kind is worse than dangerous, for it may deceive all connected with it, and deal out disease and death in the guise of a clear, sparkling fluid.

But while American hydraulic engineers have had little to do with foreign filter beds, citizens of the United States have been first to introduce methods of mechanical filtration and chemical purification combined in machines that have stood the test of extended service and have long passed the experimental stage of their existence. As at first produced they were doubtless faulty in their working and often failed in part from lack of durability or convenience in service. But careful study of conditions and demands, and the mechanical skill of American engineers have gradually eliminated these defects, until to-day machines are produced combining all the desirable qualities of efficiency, durability, economy and convenience in operation; machines that can be applied to any service, from a household filter to the demands of large factories or to the supply of cities and towns.

Passing water through sand alone may clean it, but this operation does not purify it of the matter held in suspension and invisible to the eye. Other processes are necessary, and among the most efficient may be mentioned the use of alum, oxide of iron, lime, powdered coke, artificial aeration, etc. The action of coagulants in massing impurities has long been understood and applied in the refining of sugar and in other industries, but objection has been made to the application of alum for this purpose in the purification of water to be used

for domestic purposes, in the belief that some of this agent might remain in the water. This objection is absurd to any one who will take the trouble to study the action of this coagulant. In the first place the usual quantity is in the proportion of 1 drop in 100,000 of the total volume, and if the alum did remain there it could do very little harm. But the real office of this minute injection of alum water is to gather together the impurities for which it has an affinity, and bring them into appreciable masses that can then be treated by the other processes of the filter. When these impurities are removed the alum goes with them and the water is left free from all harmful ingredients.

One of the serious objections to a sand filter is the deadening of the water, so to speak, even though the inorganic and mineral impurities are removed. In this respect the mechanical filtering process has great advantages, and in the more complete plants methods are introduced for aerating the water at the beginning of the process; and thus unloading it of a certain proportion of more or less foul gases which unite with pond or semi-stagnant water; and again at the end of the process, when both chemical and mechanical action have done their work, the intimate mixture of air serves to burn out the little that may remain of the albuminoid ammonia and dangerous living germs.

Mechanical filtration is no experiment, for we personally inspected, some years ago, a plant supplying over 2,000,000 gallons of water per day made pure by this process, and studied its operation, and can testify to its efficient and economical working; and, according to official reports lying before us, other plants of even greater capacity are "working splendidly." Under the conditions effecting so many convenient but more or less impure supplies, it is again to be wondered at that so little comparatively, is done in extending the use of an American device that was first invented to meet just this emergency, and has gone through its hour of trial and proved its ability to do good work. From those who have used them we learn that the cost of a mechanical filtering plant is not one half that of sand filters of equal capacity, and the maintenance cost is much less in proportion. It is therefore not only more certain than older methods in really purifying water, but it is also much cheaper, and there are doubtless many places in this country where the

introduction of this process would secure good water, where a natural supply of pure water would be prohibitory from its cost. In any event, the principle of mechanical filtration, and the various ingenious machines now available for this purpose, are worthy of fuller recognition by the hydraulic engineers of our country than is usually accorded; and if this article will lead any of these engineers to fairly weigh it with other projects for supplying pure water under difficult conditions its purpose will be fulfilled."

The foregoing presents the situation staring every city in the world in the face, to a greater or less extent. Apparently the foregoing article is not a boom for any business interest, although its endorsement of the use of alum will be considered by many perhaps stronger than the mechanical filter of to-day will warrant. The absolute guarantee of a proper use in quantity of alum or other coagulant, for every and all conditions of the water, does not seem in the minds of the Board positively certain by present methods, and it may be said that members of the Water Board have witnessed the work of every American mechanical filter before the public, at the present time. This opinion, strengthened and supported as it is by the published opinion of the Massachusetts State Board of Health upon the subject, has led to the present favorable leaning of the Lowell Water Board toward a mechanical filter that employs no chemicals whatever. It is to be presumed, however, that even so high an authority as the Massachusetts State Board of Health is open to conviction, and that its prosecution of experiments in another direction will not debar mechanical filtration, aided by a coagulant,

from a fair consideration in the future. We are bound to listen to the voice of Science. But it does not necessarily follow that the words of scientific men are always scientific truth. Lowell Water Works history furnishes the proof of this statement more than once. For instance, what was scientific opinion in 1870 as to the effect of Merrimack River water upon lead pipes (a matter of record) is quite the reverse to–day, and moreover, results to–day sustain the more recent view, that the lead influences, if any, are harmless.

Our citizens may know the foothold of the mechanical filtration idea in this country by following table, which will explain itself. It will be understood that besides the plants indicated below, there are of the various devices, very many in use in manufacturing establishments throughout the country. Filtration however, for domestic uses of a community, and filtration for mechanical uses, are problems involving a wide difference in the nature of the difficulties encountered.

WATER WORKS FILTERS IN THE UNITED STATES.

Galleries	39
Beds and Basins	62
Hyatt	30
National	11
American	5
Jewell	1
Warren	1
Oliphant	1
Chambers	1
Total Galleries and Beds	101
Total Mechanical	52

The above figures are from the publication of the Engineering News, and they go on to state that they have records of 19 filter galleries, beds, basins and the like, in the United States, not included in the summaries, that have been abandoned as useless, or practically so. In one or two instances the old filters have been abandoned for a commercial or mechanical filter. A few of the filters included in the summaries are reported as giving very much trouble, generally from clogging, and it is probable that more or less trouble of this sort is experienced with very many of them, largely arising from insufficient provision for cleaning or from turbid water not first somewhat clarified by settlement. Doubtless more frequent cleansing and renewal of the filtering material would have obviated many of the difficulties encountered, and made abandonment unnecessary; but this has sometimes been deemed impracticable on account of the expense involved, and perhaps nearly as often neglect has been the cause of failure. Indeed, it is probably true that the majority of the filter beds and the like, in the country are not cleansed or renewed oftener than once or twice a year, and some of them not at all. All infiltration galleries, or nearly all, cannot be cleaned at all, or at least the material about them cannot be cleansed without removing and replacing considerable quantities of sand and gravel, and generally at no small depth.

As there are in the United States 1883 water

works, of which but 180, or less than one-tenth, report filtering plants, it is evident that there is a large field open to the filter manufacturers and hydraulic engineers. For while it is true that many water works stand in little or no need of filtering plants at present, increasing population, with the increase in pollution of water supplies which will surely accompany it, will eventually render some mode of purification imperative, or else a rapidly increasing mortality will be the result. And with all that can be said or shown regarding the purity of our water supplies, there are very few that would not in some degree be benefited by filtration.

The Manual of American Water Works (1890) says, what may be a suitable conclusion to this important subject:

"We think it is evident to all who have given the matter even casual thought that the purification of the water furnished by the large majority of the cities and villages of the United States and Canada, is an important essential to the health and well-being of those communities, and that the chief method by which this purification can be secured is by filtration. We have seen that, allowing for filtering plants the existence of which is not known to us, only some 10 per cent. of the water works of the United States and between 8 and 9 per cent. of those in Canada employ filtration. Whatever the number of those without filtration and needing it may be, it is certain that here is a wide and constantly growing field of action for all who are interested in securing for the people of our cities and villages a pure water supply, whatever their motive may be; and it should be borne in mind that the responsibility of having pure water in any village or city does not rest upon the city officials or the water company alone, *but upon each tax-payer*, since from the latter come both the vote and the money

which are the first essentials in securing either a new water supply or any extensive improvements in an old supply."

PROSPECTIVE NEEDS AND EXPENDITURES.

We have already called your attention to the fact that with the placement of a new 10,000,000 engine at the Pumping Station and for which a $60,000 loan has been provided, nearly or quite as much more will need be spent to provide additional supply and discharge mains leading to and from the engine plant. This need is one of necessity and a commencement on the work cannot be longer delayed.

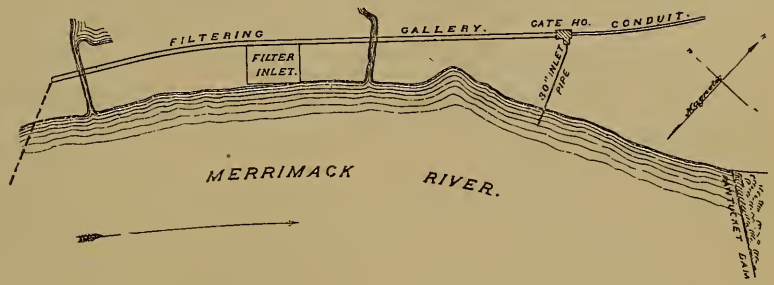
The proposed expenditure of money for suitable buildings to carry on the business of the department with proper economy has been explained in detail.

It would be proposed to meet the cost of the work mentioned by earnings of the Water Works department, which it could easily do in two years, beside maintaining the Works as should a plant of the kind be maintained.

There is one other suggested change of the Water Works plant. The change is now under consideration. Its important bearing upon the interests of all will be understood at once. The change alluded to has direct bearing on the quality of the city water, and the only hesitation in regard to recommending the work, is a lack of reasonable assurance that the change, if adopted, will bring about an improvement. We will undertake to make the present

situation clear, as well as explain the plan of new work as under discussion.

Our present supply is from a point on Merrimack River, 600 feet above Pawtucket Falls. Appended is a cut showing the situation.



From the gate chamber a cast iron pipe 30 inches in diameter leads to the river, extending into the stream a distance of about forty-five feet from the shore. This pipe is controlled by a 30-inch gate. At times the gate is open to full extent. It has always been contended that at such times, almost the entire supply of the city is drawn direct from the river. The question that now arises in the mind of the Board, is as to whether or not the entire water supply does not come through this pipe leading from the river at the point 600 feet above the falls. Does not the water through this pipe back up into the filter gallery and hold the entire contents of the gallery chamber as dead water? There is hardly a doubt in our minds that such is the fact, and if it is a fact, is not the same true to some extent when the river gate is only partially opened? If these suspicions are well

founded, of course we are not receiving the product of the filter gallery and filter basin. Again it will be apparent to those familiar with the exact location of the present inlet pipe, something like 600 feet distant from the falls, and forty-five feet from the shore, that water is not now taken from the most desirable point. When water is not flowing over the dam, the water drawn is not from the main stream, and it is for any one to consider whether or not the tendency at such times, at this point, is detrimental to the water's condition. Would not matter in suspension coming down the stream be held for a long time in the immediate waters back of the north shore end of the dam?

Allowing that this condition of things does exist, and allowing by reason of back pressure at the foot of the gallery from the supply inlet, we are prevented from receiving any material benefit from the gallery, both evils it occurs to us could be avoided in a simple manner and at comparatively little cost.

The present inlet pipe could be abandoned as a dependent source of supply, and a second main 30 inches in diameter, could be laid so as to communicate with the river in mid-stream at a point opposite the residence of the Hon. Charles H. Allen (shown by the dotted line on cut.) This main could run diagonally with the stream and enter the present filter gallery chamber at its upper end. In this way, certainly the product of the gallery and filter basin, much or little as it may be, would be swept

along to the pump wells. The only point in doubt, is as to whether the main source of supply at the point named further up stream, and away from the possible influences of the dam, would insure purer water during the entire year, and that portion of the year in particular, when by reason of lowness, no water passes over the dam.

It is a question if the desirability of placing a new intake above "Clay Pit Brook" (out-let shown in cut) is not in itself a matter of sufficient importance to demand immediate measures. The point of discharge of this stream is certainly suspiciously near the present intake.

The only objections raised, so far as learned, is a fear that the peculiar silt of the river, would find its way into the gallery and practically cement the sides and floor of the gallery, destroying it as a deliver of water entirely. In answer to such objection, it might be said that the 30-inch pipe from the river could continue through the gallery discharging into the present inlet chamber and conduit. In such case the water from the gallery would find its intended outlet and become of certain use.

This, as stated, is a matter under consideration. The proposition is plain. Are the beneficial results as easy to vouchsafe? If they are, the work should be done, for no citizen in Lowell begrudges money expended in absolute betterment of the water we drink.

It will be understood from what has been stated, that the two or three years to immediately follow, will be years of extraordinary expenditure for water works. The three years to come, will be very important ones in the history of the Lowell Water Works, and ones that should be free if possible from mistakes. We believe, as a Board, that we fully realize how much the city's welfare depends upon a wise administration of its Water Works affairs at this time, and immediate future; be assured that those of the present Board who have been chosen to serve the city for a longer period will strive to perform their whole duty.

JOHN STOTT,
W. A. DICKINSON,
MILES F. BRENNAN,
ARTHUR F. SALMON,
EDWARD W. THOMAS.

	Extension Interest.	Flushing Sewers.	Shut-off Fines.	Lime Charges.
Transfer Account of 1889	.....	.....	.....	.....
January	.... ..	$ 4 00	$ 4 00	$ 72
February	.....	4 00	.....	67 98
March	.....	16 00	. ....	1 38
April	.....	12 00	2 00	99 96
May	.....	8 00	4 00	43 08
June	.....	8 00	4 00	49 12
July	.....	16 00	.....	34 86
August	.....	16 00	. .....	19 20
September	.....	4 00	108 00	58 32
October	$120 00	8 00	10 00	45 24
November	.....	12 00	8 00	66 59
December	.....	4 00	.....	46 92
Totals	$120 00	$112 00	$140 00	$533 37

	RESERVOIR.		METER DEPARTMENT.			
	Labor.	Supplies.	Meters Bought.	Repair Material.	LABO Setting And Repairs.	
January	$57 55	....	$ 923 15	$ 12 25	$ 133 75	$
February	46 04	.....	238 50	18 12	113 25	
March	57 55	.....	221 67	2 87	139 50	
April	46 04	.....	1,069 29	5 35	84 75	
May	57 55	.....	954 31	4 78	145 50	
June	46 04	.....	588 44	68 45	121 68	
July	46 04	$ 1 25	868 37	.....	115 00	
August	57 55	97 73	119 88	112 61	163 50	
September	46 04	.....	723 65	.....	127 50	
October	46 04	15 22	603 41	13 60	112 25	
November	89 04	99 67	33 37	19 86	130 75	
December	34 50	38 12	.....	23 71	90 00	
Totals	$629 98	$251 99	$6,344 04	$281 60	$1,477 43	$

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EXPENDITURES.

Paid for Sundries:

Adams, Charles E.	$ 2,985.19
Allen & Son, Otis	20.00
American Bolt Co.,	99.79
American Bank Note Co	1,022.36
American Express Co	3.95
American Frost Meter Co	632.00
American House	57.00
Armitstead, A. N	6.80
Ashworth, Sager	.60
Atwood, Wm. P	7.00
Bacheller, Dumas & Co	256.15
Bangs & Horton	107.78
Barker Manuf'g Co	2,423.44
Bartlett & Dow	68.66
Bateman, A. P	11.73
Bean, Sylvester	3.28
Bennett, J. C	20.98
Bigelow, E. W. & Co	4.50
Boston Engraving Co	60.00
Boston & Lowell Exp. Co	.80
Boston & Maine R. R. Co	785.21
Boutwell Brothers	60.42
Brazer, Wm. P. & Co	7.50
Brigham, Charles W	5.40
Builders Iron Foundry	1,094.72
Burnham, Forrest & Davis	193.96
Buxton & Chapman	4.00
Cady, George L	5.00

Paid for Sundries:

Campbell & Hanscom	41.95
Carleton & Hovey	6.40
Carr, Charles	17.55
Chadwick Lead Works	42.10
Chapman Valve Manuf'g Co	2,475.58
Charon, Moses	27.00
Church, H. C. & Son	115.50
Citizen Newspaper Co	94.85
City: Fire Department	10.00
Lighting	3.00
Reserved Fund	62.55
Roads & Bridges,	358.56
Coburn, C. B. & Co	627.22
Cole & Nichols	280.80
Coleman, John B	15.00
Conlan, P	23 00
Conners Brothers	22.10
Costello, T. & Co	1,126.74
Critic Publishing Co	6.10
Deane, F. W	25.00
Delaney, Thomas	7.24
Deming & Parker	46.20
Derby, L. A. & Co	6.84
Donaldson Iron Co	1,468.78
Duren, E	18.00
Ebert, H. F	63.28
Edson Manuf'g Co	4.05
Engineering & Building Record	4.80
Engineering News	11.40
Evans, Joseph	43.15
Farrell & Conaton	3.47
Fay Bros. & Hosford	34.06
Fire & Water	3 00
Foss, C. F. & Co	4.73
Fuller, W. H	69.37
Gage, Daniel	32.86
Gates & Sons	54.25
Gagnon, B. C. & Co	6.01
Gloucester Iron Works	3,105.38
Glover, W. B	2.60

Hathaway, E. F.	6.74
Hewitt, C. B. & Bros.	57.78
Holland & Daniels	16.00
Horne, D. W. & Co.	5,296.35
Howard & Wilson	147.65
Howe, W. G.	15.63
Howe Bros. & Co.	158.50
Jacobs, J. H.	3.48
Johnson, J.	15.00
Jones, S. H.	418.40
Jones, T. H. & Co.	14.69
Katzenstein & Co.	28.47
Kittredge, A. L.	9.50
Knapp, Charles L., Clerk	248.91
Knapp, Joel & Son	2.50
Knowles, William	3.00
Kelley, William & Son	.90
Laughton, A. I.	3.75
Leach, J. E.	25.65
Leavitt, E. D.	206.68
Lee, Thomas C.	30.00
Lepine & Co.	14.00
Livingston, Wm. E.	4,087.07
Lovejoy-Paul Exp. Co.	8.25
Lowell Daily News	17.17
Lewell Electric Light Co.	318.50
Lowell Gas Light Co.	49.72
Lowell Felting Mills	6.75
Lowell Machine Shop	329.19
Lowell Morning Mail	132.09
Lowell Weekly Sun	5.75
Lowell Rubber Co.	5.06
Lyon, J.	6.00
Mack, Wm. A. & Co.	2.58
Mead, A. W.	3.60
Merrill, C. B.	3.00
Merrill & Son	17.50
Merrimack Rubber Co.	12.25
Marden & Rowell	15.37
Miller, Joseph	210.75
Morrill, F. L.	4.50

Morse, A. J. & Son	7 50
Morse & Sparks	26 85
Murphy & Bingham	16.00
National Meter Co	5,006.80
Nelson, C. H.	68 32
New Eng. Telegragh and Telephone Co	265.79
New York & Boston Express	5.70
Nichols, Wm. & Co	29.45
Norcross, N. W. & Co	37.50
Olmstead & Tuttle Co	15.47
Page Belting Co	4.50
Parker & Hall	21.42
Partridge, A. V.	10.00
Pennichuck Water Works	2.55
Perrin, Seamans & Co	133.91
Pevey Brothers	51.21
Phillips, J. L. & Co	2.13
Pierce, John	2.20
Pratt, Amasa & Co	79.61
Prescott, D. M	31.53
Prince, J. C. & Son	3.75
Proprietors Locks & Canals	2 41
Remick, John	44.37
Rice & Co	109 60
Roberts, James P	4.00
Robinson, C. F	125.00
Rollins & Son	3.65
Runels, Charles	16 88
Sawyer Carriage Co	63.24
Scannell & Wholey	392.28
Severance, J. L	3.05
Shattuck, Horace B	87.50
Sherman & Manning	6.50
Smith, James	116.00
Smith, E. A. & A. T	137.65
Smith, J. R.	8.00
Smith, Melvin B	7.00
Snow, R. D	77.01
Spalding, W. H. & Co	81.11
Sparks, J. H	12.00
Spencer & Redmond	30.73

Stanton & Thurston	6.50
Staples Brothers	1,120.35
Talbot Chemical Co	3.30
Taylor, F. & Co	50.13
Thomas, E. W	62.50
Thompson, C. C	54.02
Tyler, J. Estate	17.84
Union Iron Foundry	165 42
Vox Populi Press	108.55
Washburn, C. D	1 99
Weaver, S. H	7.00
Western Union Telegraph Co	6.91
Wheelock Engine Co	387.13
White & Sweatt	1.85
White Mountain Axle Oil Co	3.00
Whittier Machine Co	835.92
Whithed & Co	538.46
Whithed, Darius	18.31
Whitney, C. H	9 50
Whittet & McDonald	45.81
Wilder, H. H. & Co	222.45
Wood, E. N	40.77
Wood, Dr. Robert	2.00
Wood, R. D. & Co	663.15
Woods, Sherwood & Co	6.00
Worcester & Co	4.50
Worthington, H. R	628.01
Wright, M F., Superintendent	181.20
	$ 45,136.61

The following Table will Show the Expenditures and Receipts of the Works from 1873 to 1891, exclusive of Interest on the Water Debt and Expense of New Bond Plate in 1891.

	Expenditures.	Receipts.	Expenditures in excess of receipts.	Receipts in excess of Expenditures.
1873.....	$188,376.59	$57,739.48	$130,637.11	
1874.....	128.105.63	80,625.65	47,479.98	
1875.....	170,095.78	94,908.14	75,187.64	
1876.....	115,012.24	98,815.54	16,196.70	
1877.....	53,988.72	100,826.63	.....	$ 46,837.91
1878.....	49,900.15	104,142.87	.....	54,242.72
1879.....	42,157.82	110,185.34	.....	68,027.52
1880.....	45,031.59	123,740.49	.....	78,708.90
1881.....	121,601.27	128,053 97	.....	6,452.70
1882.....	64,525.92	140,397.96	.....	75,872.04
1883.....	65,673.23	152,582 99	.....	86,909.76
1884.....	64,982.71	154,437.55	.....	89,454.84
1885.....	64,030.24	157,956 79	.....	93,926.55
1886.....	51,808.52	168,757.53	.....	116,949.01
1887.....	62,236.05	178,234.29	.....	115.998.24
1888.....	75 234.73	183,127.37	.....	107,892.64
1889.....	80,554 68	189,247 66	.....	108,692.98
1890.....	78,073 46	193.963.80	.....	115.890.34

Charges for Water by Months, from Commencement to Dec. 31, 1890.

MONTHS.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.
January	. . .	$ 363 94	$ 418 96	$ 150 45	$ 126 51	$ 169 14	$ 282 44	$ 233 73	$ 182 58
February	. . .	35 53	235 43	238 85	86 84	144 38	238 19	349 08	146 40
March	$6,124 94	50,200 10	65,417 68	82,249 51	89,177 52	82,225 43	80,603 69	80,567 44	89,210 88
April	785 89	1,739 50	935 20	265 34	584 11	1,970 12	9,242 84	6,478 39	540 20
May	2,988 16	3,274 09	2,147 96	874 47	1,819 65	1,121 43	2,751 35	1,476 15	879 61
June	5,818 78	2,865 86	2,887 43	4,460 91	2,389 52	3,903 69	6,126 86	868 08	12,574 12
July	4,833 52	1,889 03	1,926 31	582 68	3,147 78	1,261 24	1,213 13	11,457 84	273 00
August	2,728 30	498 50	449 86	771 87	799 88	677 01	563 35	459 17	514 46
September	2,827 07	3,245 06	865 90	495 97	3,493 90	4,998 07	6,584 86	8,108 23	10,088 19
October	9,729 05	872 10	2,947 93	4,893 44	543 79	663 80	454 29	338 51	309 22
November	761 21	634 03	573 35	1,445 65	518 72	1,220 27	1,405 89	620 56	873 16
December	1,571 72	3,689 79	3,955 59	3,246 39	4,040 71	4,522 75	5,794 77	7,851 52	9,593 32
Totals	$39,168 64	$69,307 39	$82,861 60	$99,674 93	$98,178 93	$102,877 32	$115,261 20	$118,808 70	$125,975 27
Less abatements to date,	. . .	1,872 83	640 06	8,185 88	2,502 65	4,343 13	9,590 05	1,702 13	3,766 88
Net amounts . . .	$39,168 64	$67,434 56	$82,221 54	$91,489 05	$95,676 28	$98,534 19	$105,671 15	$117,106 58	$122,208 39

Charges for Water by Months, from Commencement to Dec. 31, 1890 (continued).

MONTHS.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.
January . .	$ 233 37	$ 271 52	$ 472 76	$ 702 05	$ 410 21	$ 427 66	$ 454 33	$ 420 32	$ 720 57
February . .	139 22	136 06	347 66	352 90	439 68	439 98	343 06	495 71	404 09
March . . .	90,856 37	94,956 65	98,692 13	102,961 30	104,537 77	111,281 68	110,812 26	114,110 39	122,505 39
April . . .	403 64	263 10	351 73	439 64	1,355 01	773 67	536 02	1,219 74	2,063 77
May . . .	1,191 41	984 84	1,495 90	1,062 34	1,760 48	2,057 80	1,750 52	2,618 47	2,886 65
June . . .	16,401 62	17,757 44	18,709 27	21,203 61	23,768 43	23,017 09	26,090 68	25,322 78	23,829 83
July	959 80	1,059 37	899 21	1,053 36	1,434 99	2,383 37	1,781 40	1,328 39	1,280 10
August . . .	634 40	902 76	984 17	828 40	1,173 44	927 65	1,072 41	1,273 06	1,359 20
September .	10,904 30	12,467 32	12,939 94	13,452 97	16,105 05	18,397 55	16,773 25	16,288 39	20,813 65
October . .	552 27	941 81	738 12	697 87	783 29	1,108 16	1,414 52	1,107 60	1,357 71
November .	378 97	1,615 65	693 41	477 10	686 02	683 55	937 19	874 11	1,008 28
December .	10,848 68	12,512 70	12,544 55	12,617 45	12,825 41	15,927 35	14,476 76	15,096 53	15,387 52
Totals . . .	$133,503 45	$143,869 22	$148,028 85	$155,848 98	$165,279 78	$177,425 51	$176,442 40	$180,155 49	$193,616 76
Less abatements to date	2,490 50	3,094 15	4,314 79	3,946 34	2,991 18	2,367 70	2,794 87	†5,414 91	4,909 39
Net amounts	$131,012 95	$140,775 07	$144,614 06	$151,902 64	$162,288 60	$175,057 81	$173,647 53*	$174,740 58	$188,707 37

* A reduction of $6,084.00 is accountable, owing to reduction of annual charge for fire hydrants.

† Abatements represent errors in making charges, clerical errors, abatements voted by Water Board, etc. A large item is that of abated rates as charged in annual account, and abated on account of meters set during the year.

The following Table will Show the Gross Cost of the Water Works Yearly, from the Commencement of the same to Jan. 1, 1891.

Expended in	1870	$ 95,057.00
"	1871	624,151 66
"	1872	560,708 40
"	1873	349.717.87
"	1874	233,370.63
"	1875	275.660.78
"	1876	221,502.24
"	1877	163,814.28
"	1878	158,510.15
"	1879	150,047.82
"	1880	154,391.59
"	1881	231,171.27
"	1882	173.645 92
"	1883	180.280.28
"	1884	175,290.20
"	1885	176.972 56
"	1886	169,105.22
"	1887	176,906.05
"	1888	183,279.73
"	1889	193.535.48
"	1890	194.108.32
Gross Cost of Works to Jan. 1, 1891		$4,841,227.27
Receipts to Jan. 1, 1891		2,453,398.47
Net Cost of Works to Jan. 1, 1891		2,387,828.80

Present Condition of Merrimack River at Lowell, as Shown by Microscopic Examinations.

Professor Sedgwick of the Massachusetts Institute of Technology, appeared before the Lowell Water Board on the afternoon of December 23rd, 1890. Following statements made by him at the time, it was voted: That Professor Sedgwick be authorized by the Lowell Water Board to continue his scientific research. To employ all means at his disposal to ascertain if any danger of any kind existed in the water of the Merrimack River at Lowell. Also that he make an exhaustive report upon his findings, and that at as early a day as possible.

The Water Board have nothing to offer as to opinion of the condition of the river at the present time; they, however, offer the following, which must be accepted as coming from a very high authority upon the matter treated:

MASS. INSTITUTE OF TECHNOLOGY:
BOSTON, Jan. 10th, 1891.

To the Water Board of Lowell, Mass.:

GENTLEMEN:—At your request I have undertaken and am carrying forward, as rapidly as possible, a thorough investigation of the sanitary condition of the water supply of Lowell, with special reference to the possible existence in the city water of the organisms which are believed to produce typhoid fever. I have already collected and examined samples of the water from each ward, from both reservoirs from the filtering gallery, and from the Merrimack River near the intake and from points above. Up to the present time, however, only negative results have been obtained. Although large numbers of samples have been examined by the approved methods of bacteriology, I have as yet failed to find in them even one typhoid fever germ. The investigation, however, is still incomplete and it may require some weeks to arrive at positive conclusions. Meanwhile, for reasons which will appear in the full report, it would probably be a wise precaution if the citizens should boil, for at least fifteen minutes, all water that is to be used for drinking.

Respectfully submitted,
WM. T. SEDGWICK.

LEGAL DECISION.

During the year 1889, the case of Merrimack River Savings Bank vs. City of Lowell (Water Works), suit for $3000, was tried in the Superior Court before Judge Mason.

The assessments on the premises over which the suit arose, for the year commencing Aprli 1, 1886, were not paid, and on Jan. 13, 1887, the plaintiff, which held a mortgage on the premises, dated April 28, 1885, entered to foreclose the same for breach of condition thereof, and continued in possession under the entry.

On or about June 1, 1887, the bank paid the full amount of water rates assessed on the premises for the year commencing April 1, 1887, and on August 1, 1888, the bank was notified by the Water Board that unless the assessments for the year beginning April 1, 1886, were paid the water would be shut off. The bank refused to pay this assessment, the water was shut off, and the suit mentioned begun to recover for alleged damages sustained by reason of shutting off.

At the trial Judge Mason found for the plaintiff, assessing damages in the sum of $56.00 the damages based upon value of water plaintiff failed to receive from defendant.

The case was appealed and finally was heard before the full bench of the Supreme Court. It proved an interesting case, and there is reason to believe that the decision was reached only by a vote of 4 to 3, against the City.

The following is the full text of the ruling of the Supreme Court:

MERRIMACK RIVER SAVINGS BANK VS. THE CITY OF LOWELL.

Knowlton, J. The most important question in this case is whether a city or town which is authorized by statute to furnish water to its inhabitants to be paid for by them, and which has received from a house-holder payment in advance for water to be furnished, and has arbitrarily cut off his supply, can be held liable in damages in an action at law.

By the statute of 1885 c. 435 and by subsequent statutes, the city of Lowell is authorized to take water from the Merrimack River to take and hold lands, lay down and maintain aqueducts and pipes from the Merrimack River into and about the city, and to do all other acts necessary to furnish the in-

habitants of the city with water in their houses and elsewhere, with the right to "regulate the use of said water and to establish, receive, and collect the prices or rates to be paid therefor." The city has acted under this statute, and is supplying the people with water in accordance with its provisions. The plaintiff paid the established rates for a supply of water at his house from April 1st, 1887, to April 1st, 1888, but on September 3rd, 1887; the water for the next preceding year not having been paid for, the city shut off the water from the defendant's premises.

It is argued that after payment for the water the plaintiff had only a revocable license to use it, and that the city violated no legal right in depriving him of it. It is also sugested that the city is merely performing a public service, and that the rates paid for water by individuals are special taxes, and that there is no contract or obligation on the part of the city to furnish water after payment other than the public duty which it owes to all its inhabitants, and that the plaintiff's remedy, if any, is by a writ of mandamus to compel the performance of this duty.

It is true that water supplied by cities and towns to their inhabitants under our statutes is in a broad sense furnished for public use, and that the constitutional authority to tax the people for this purpose is found in this fact. But while the right rests upon the general benefit to the community from having water for uses in which everybody has an interest, and from the existence of a supply accessible to the whole public from which every individual may obtain water for his private use cities and towns may under statutes authorizing them to furnish water to their inhabitants, make reasonable contracts with individuals to supply them with water for a price to be paid. These contracts should not be inconsistent with the performance by the municipality of its general public duty, nor exceed the reasonable limits which may be reached in the performance of that duty. The general expenses of providing a supply of water, and the general benefits to the municipality from the uses of water which are strictly public are paid for by general taxation of the inhabitants. There are no special benefits for which special assessments are made growing out of the introduction of water. Special payments are made by individuals only when they are supplied with water at their request; and

then only for what is furnished, and for the time that it is furnished. While these may be called special assessments for the use by individuals of particular privileges which are a part of a general provision for all the people, it seems to be more consistent with the nature of the transactions to consider them as payments of the price of a commodity, sold under a general authority to provide for the public, and to sell upon request in a reasonable way to the persons who constitute the public. Tindley v. Salem 137 Mass. 171, 172.

That the defendant might under the statute of 1855, c. 433, s. 3, make reasonable express contracts with all water takers in the city as a convenient mode of supplying water and collecting pay for it seems clear. The language which we have quoted from the statute implies that the payment is to be made of the price of what is furnished, and that, in the absence of an express contract or of any regulation fixing the mode of collecting payment, there would be an implied contract on the part of one receiving water furnished by the city at his request to pay for it the price established.

In Stock v. Boston, 149 Mass. 410, it was assumed both by the counsel and the court, under a similar statute, that the City of Boston having complied with the request of an applicant to deliver water by pipes at his greenhouse, and, presumably having been paid for it, was under a contract to continue the delivery.

The exceptions do not give the ordinances and regulations in full, but from the statute and such ordinances as appear, a majority of the Court are of opinion that, upon the application by a property owner to the city for a supply of water at his house for a reasonable time, and the acceptance of his application, and a receipt from him of payment in advance for the water, the city is under an implied contract to continue to furnish it during the term in the manner that the statute contemplates, so far as it can be done by a reasonable effort to perform the duty to the public and to individuals which it has assumed.

If no such contract were implied still we think that the city owes him a duty beyond the public duty which it assumes by proceeding under the statute. For the purposes of this case it may be conceded that the duty of a city to furnish water on equal terms to all its inhabitants is general and public, and

that for the breach of it no action at common law will be in favor of an individual. But the receipt of his money in payment for water which he asks for is, impliedly, an undertaking to do for him as an individual a particular thing in which no one else has any interest, and it then becomes the duty of the city to do it, not only in the performance of its public duty to furnish water for the use of all the people in the aggregate, but in the performance of the particular undertaking to furnish him with water for his private use. This undertaking founded in part on a consideration moving from him, imposes a special obligation solely for his personal benefit, and creates a liability at common law for neglect of the duty. The principle is analogous to that which enables one disturbed by a public nuisance to maintain a private action in certain cases for special damages which he suffers as owner of property. Wesson v. Washburn Iron Co. 13 Allen 95.

The water furnished for the year commencing April 1st, 1886, was not paid for as required by the ordinance, and on January 13th, 1887, the plaintiff having a mortgage on the premises, entered to foreclose it for a breach of the condition, and afterwards continued in possession. On June 3d, 1887, the plaintiff paid the full amount of the water rates for the year commencing April 1st, 1887, and on September 3d, 1887, the water was shut off for non-payment of the rates assessed for the year commencing April 1st, 1886. The water had not been cut off during the year for which the unpaid assessment was made, and at the time it was cut off it was being furnished for a term for which the city had received from the plaintiff payment in advance. The receipt of this money amounted to a contract, or created a duty to furnish the plaintiff with the water throughout the year, in the manner contemplated by the statute, so far as it could be done by making a reasonable effort to perform the duty which the city had assumed, and precluded the city from afterwards cutting off the water under its ordinance on account of the failure of his predecessor in title to pay the rent for the former year.

Whether if the water had been previously cut off under the ordinance, the plaintiff could have compelled the city to turn it on without payment of the amount due for the previous year it is unnecessary to decide. Exceptions overruled.

The parties to the suit are doubtless both disappointed. The city is certainly, not from loss of suit, so much as from failure to reach a decision upon the oft-disputed question as to the right of the city to deprive persons from use of water, on account of debt contracted by previous owner, and as the city ordinance clearly asserts, the Water Department not only can do, but *shall* do. The suit in no way effects the present method of conducting business at the Water Office, and as usual it will be necessary for consumers to pay for water consumed, in order to secure uninterrupted use.

Report of the Superintendent

Lowell, Mass., Dec. 31, 1890.

To the President and Members of the Lowell Water Board:

Gentlemen: — In accordance with the City Ordinance I herewith present the eighteenth annual report of the Superintendent of the Lowell Water Works, for the municipal year ending Dec. 31, 1890.

SUPPLY MAINS.

There has been less work done in this department the past year than in 1889. There have not been calls for long lines of extensions as quite a number of long lines were finished last season, that had been before the Board, in some cases for several years.

There has been laid 14,320 feet of cast iron pipe, in sizes from 4-inch to 12-inch, as against 20,510 in 1889. The 4-inch has been laid only on courts, or streets where there would most likely never be an outlet or use for a hydrant.

The longest new line laid was in Rea Street,

consisting of 1001 feet of 6-inch pipe.

There has been a very large number of feet relaid the past year. The longest line for relaying was 1229, in Cheever Street, where the Board thought it advisable to take up the 6-inch, 4-inch and 1-inch pipe that was inadequate in case of a large conflagration, and 8-inch was laid in its place, with four large 8-inch hydrants set thereon. There were 764 feet of 4-inch pipe taken up on Lawrence Street, and 6-inch laid in its place, on account of the street being macadamized by the Street Department.

The Street Department were to change the grade of Hale Street, and also to pave it, so the Board thought it best to relay the 428 feet of 4-inch and 1-inch pipe before the work of paving was commenced, and 6-inch was laid in its place.

Five hundred and thirty feet of 2-inch pipe was taken up on Blodgett and Crescent Streets, owing to the streets being cut down so as to leave only one foot of cover on it, 6-inch pipe was laid in its place.

The rebuilding of the bridge on Merrimack Street, obliged us to relay the 12-inch pipe which formerly ran under the canal. It now runs over the arch only about six or seven inches under the pavement.

The owners of mill property in the vicinity of the Cartridge Shop, and other mills close by, thought the supply should be improved, and 274 feet of 4-inch, and 130 feet of 1-inch pipe on

Moore Street was taken up and 8-inch laid in its place, also connected it with Gorham Street, which makes a continuous line of 8-inch pipe from Gorham to Lawrence.

An improvement was made in the heart of the city that was very much needed. Four hundred and fifty feet of 12-inch pipe was laid in Palmer Street, connecting the Merrimack Street 12-inch line and Middle Street 8-inch line with Market Street 16-inch line, which will give all the water so far as supply is concerned, that is needed for years to come.

Three hundred and sixty feet of 1 1-4-inch pipe was taken up in Rolfe Street, and 6-inch laid in its place.

Two hundred and sixty-two feet of 2-inch was taken up in Gold Street, and 4-inch laid in its place.

Belmont Avenue was cut down by the Street Department, some four feet, which obliged us to lower about 200 feet of our pipe.

NEW SERVICES.

There have not been as many dwelling houses built the past year as usual and of course there has not been as many calls for new services as in 1889. There has been 261 new services laid this year, measuring 8950 feet, as against 356 last year measuring 11,537 feet.

5-8-inch lead pipe	2,719	feet.
3-4-inch lead pipe	5,158	"
1-inch lead pipe	577	"
3-4-inch iron pipe	34	"
1-inch iron pipe	140	"
2-inch iron pipe	322	"
Total laid during 1890	8,950	"
Amount previously laid	310,666	"
Total now laid	319,616	"

Or 60 miles 2816 feet.

Total number services put in	8,732
Total cut off at main	461
Total re-connected	33
Total now in use	8,304

OLD SERVICES.

More old services have been changed in 1890 than in 1889. Two hundred and sixty-eight services, measuring 9472 feet, as against 239 measuring 8798 feet in 1889; and in all probability the number of changes will continue to increase until all the old iron ones are replaced by lead.

Number and Kind of Services Changed During the Year 1890.

	SIZE OF SERVICES CHANGED FOR.	⅝ inch lead.	¾ inch lead.	1 inch lead.	1½ inch lead.	2 inch iron.	1 inch iron.	No. of feet.
14	3-4-inch iron . .	393	...	...	...	...	...	393
200	3-4-inch iron . .	...	6765	...	...	...	...	6765
39	3-4-inch iron . .	...	...	1303	...	...	...	1303
1	3-4-inch lead . .	...	...	53	...	...	...	53
1	1-inch lead . . .	...	...	...	96	...	...	96
1	3-4-inch lead . .	...	...	...	...	17	...	17
1	3-4-inch iron . .	...	...	...	...	...	25	25
6	1-inch iron . . .	...	...	...	...	647	...	647
5	1-inch iron . . .	...	...	173	...	...	...	173
268	Total	393	6765	1529	96	664	25	9472

A larger number of wooden sidewalk boxes have been removed than last year, which makes a large amount of work that really does not show.

HYDRANTS.

A large amount of work on hydrants has been done the past year. The usual number of hydrants have been set on lines of new pipe; in other points where it was thought best to better the fire service, others have been set. One large four-way independent valve hydrant was set on Lawrence Street, opposite the American Bolt Company's yard. An old fashioned flush hydrant was taken out at Faulkner's Mills, and a large four-way independent valve hydrant set.

Two of the large hydrants have been set on Palmer Street line, also a Lowry at the corner of

Merrimack and Palmer Streets, and one at the corner of Market and Palmer.

Other Lowry hydrants have been set, one on Suffolk Street, Prince Street, in front of Tremont & Suffolk gateway; front of Merrimack office, Dutton Street; near the gateway of the Merrimack Print yard gate, Dutton corner Fletcher; Central corner Church.

In all 28 new hydrants have been set, including the Lowrys. The Lowrys have all been set in brick boxes. All of the hydrants set during the past year have been of the Chapman pattern, with the exception of the Lowry.

Two flush hydrants have been discontinued at Palmer Street, as both of them were in the line of the street as now laid out. A flush hydrant at the corner of Howard and Hale Streets was replaced by a Chapman post hydrant.

The Post hydrant on Tanner Street was changed about 170 feet; it set so close to buildings that in case of fire it would be of no value to the fire department.

On account of changing the line of Lawrence Street, three hydrants were changed to conform to the new lines of curbing.

We have had less trouble with hydrants the past year than in former years. We have paid particular attention as to their use. Men in the employ of the Water Department only have had charge of

them. When a sewer was to be flushed by the Sewer Department, a man from the Water Department was sent to operate them. And in my judgment none but Water Works employees should be allowed to handle them for flushing purposes.

GATES.

There have been 37 gates placed on the mains, in size from 4-inch to 12-inch. The section of the city known as Little Canada, has been divided into sections, so a portion of it can be shut off without shutting off all the tenements, while in previous years there was but one gate, on Hall Street, that regulated the whole section, and shut off all people and also all the fire supply. The question of notifying people on a line to make repairs or connections, is quite an item as the gate plan is to-day. Take the section of the Bleachery vicinity; in order to make any needed repairs to mains, all the people from Lawrence Street at corner of Andrews, to Gorham through Moore, and all cross streets had to be notified, which would take fully half a day for four or five men; a gate was placed at the corner of Moore and Lawrence Streets.

The same trouble existed in the upper part of Broadway. In order to make repairs on Broadway, we were obliged to go way over in Ward Four to close gates; a gate was set at the corner of Wilder and Broadway Streets. Other sections will be remedied next year.

LEAKS.

Very few leaks have occurred in the mains during the past year.

In November, a break occurred at the corner of Suffolk and Moody Streets, when a 6-inch pipe broke entirely off, caused probably by the settling of the earth of the sewer ditch.

In December, a leak was found in the 24-inch force main at the entrance to the reservoir, and excavation was made to the depth of 17 feet, when it was found that all needed was about two minutes work at driving up the joint.

A leak has been known to exist in the 20-inch pipe, just before crossing the canal, on Cabot Street, for a long period of years. After digging for eighteen hours to the depth of 21 feet, the pipe was reached, and the leak repaired with very little trouble, after which the gate connecting the corporation line of 20-inch pipe with Merrimack Street was opened, and left so for the first time since it was put in place.

Several other small leaks have occurred on the mains during the past year, but of no importance.

A large number of leaks have occurred in the old iron services the past year, and will continue, until they have all been renewed and replaced with lead services, from which we very seldom hear from.

RESERVOIRS.

Both High and Low Service Reservoirs are in very good condition, and have required but very little outlay. A new set of screens have been made for the gate house. The screens have been cleaned four times the past year; at each cleaning there was found to be very little filth collected on them.

CLEANING.

The street mains have been blown off three times: April 13th, June 22nd, and November 21st. Twelve 6-inch gates were opened into the canals and rivers, and allowed to run until the water was as clear as could be, which was done between the hours of 9 and 12 P. M.

The well at the Pumping Station has been cleaned out the first Sunday of each month, when the height of the water in the reservoir would permit.

The 30-inch pipe under Beaver Brook has been blown out.

Very little trouble was experienced last winter with floating ice. January 9th and March 7th and 8th there was enough to stop the supply of water to the conduit so as to stop the pumps, until the same was removed.

The filtering basin has been cleaned twice during the year; very little sediment was found to have collected.

The past summer and fall the screens at the river inlet have been cleaned three and four times each week. Sometimes a large amount of silt and grass would be removed, and at other times scarcely anything would be found.

FIRE SERVICES.

A six-inch fire service has been put into Harris' mill on Ward Street.

One in the yard of the Superintendent of the Lowell Cemetery, with a flush hydrant.

One at the Lowell Hospital on Pawtucket Street, with three-way post hydrant.

One at White Brothers' new building on Perry Street.

A 4-inch fire service in the new City Hall, and one of the same size in the new Memorial Building.

One 2-inch fire service at White Brothers' tannery on Howe Street.

STAND PIPES.

The stand-pipe for street watering purposes was taken from School corner Broadway, and placed on Worthen Street; also one at School Street corner of Westford was changed to Lane Street, corner Westford.

A new one was placed at the entrance of the Boulevard, off Riverside Street, at the expense of the Boulevard Appropriation.

WATERING TROUGHS.

On account of the changing of the line of Lawrence Street, the drinking fountain at the corner of Agawam Street, was changed to the opposite corner of Andrews Street.

In the earlier part of the season, during the mad dog scare, there was a call made, through the press, for places where the canine could get water to quench his thirst; consequently an iron basin was bolted on to each of the public fountains, connected with the running overflow from the trough above, and of course, not wasting any more water.

METERS.

The question of meters has become a very important one in the Board. In 1889, the Board decided to take out all the Worthington meters and go through a thorough cleaning. Extra help was put on to expedite the work, which resulted in the taking out and cleaning the 450 which we have on the list of meters.

A larger number of meters have been set the past year, than in any previous year; the meters that have been set are mostly of the Crown pattern, with some Worthingtons, Frosts and Thomsons.

Meters Running January 1, 1891.

SIZES IN INCHES.	⅝ in.	¾ in.	1 in.	1½ in.	2 in.	3 in.	4 in.	Total.
Desper	373	129	56	. . .	. . .	. . .	. . .	555
Worthington . . .	269	25	44	70	35	8	3	454
Crown	263	393	143	1	6	1	2	809
Duplex	9	13	9	. . .	. . .	. . .	. . .	31
Ball & Fitts . . .	13	4	2	1	. . .	. . .	. . .	20
Fitts Rotary . . .	3	1	. . .	. . .	. . .	. . .	. . .	4
Frost	33	10	3	1	1	. . .	. . .	48
Thomson	1	9	2	. . .	. . .	. . .	. . .	12
Bal. Valve	. . .	1	. . .	. . .	. . .	. . .	. . .	1
Gem	. . .	. . .	. . .	. . .	1	. . .	. . .	1
*Motor Register . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	0
Total	964	585	259	73	43	9	5	1935

*All motors in the city are now on meter, from which consumption is obtained.

Private Meters Running January 1, 1891.

SIZES IN INCHES.	⅝ inch.	¾ inch.	1 inch.	2 inch.	Total.
Desper	1	3	1	. .	5
Worthington	. .	. .	1	1	2
Crown	11	15	1	. .	27
Duplex	1	. .	. .	. .	1
Frost	2	1	. .	. .	3
Thomson	6	1	. .	. .	7
Hersey	1	. .	. .	. .	1
Total	22	20	3	1	46

Over 300 meters have been repaired without removing them from the cellar, which shows the necessity of having a competent man in charge of meter repairs.

A new system of setting meters in sidewalks has been in use the past season. Previous to 1890, a wooden box has been placed in the ground, and covered with an iron cover marked "Hydrant." This year we have set most church and manufactory meters in vaults built of brick, with a cover marked "Meter," so there will be no question to the Fire Department, also be a help to our own Inspectors.

PUMPING STATION.

The work of the two engines has been divided up the past year, the Morris having pumped 1,490,296,960 gallons of the water into the reservoir, while the Worthington has pumped 471,595,910 gallons, making a total of 1,196,892,870 gallons in 1890, as against 1,691,804,700 gallons in 1889.

The Morris engine has had but one outlay made upon it, which was very much needed, at a cost of about $450. Otherwise, there has been but very little money expended.

There is one important piece of work I would most heartily recommend to the Board: the laying of about 1200 feet of 10-inch pipe in Rogers Street to connect the Oaklands with the low service. By so doing, quite a large number of water takers

could be taken from the high service and placed on the low service. The sooner it is done, the easier it will be, as the district is building up quite fast, and by delaying it, of course there will be more people to find fault when it is done.

In closing, I desire to express my obligation to the President and members of the Water Board, and all other employees of the department.

Most respectfully submitted,

MILLARD F. WRIGHT,

Superintendent.

Low Service — Water Pipes Laid in 1890.

STREETS.	BETWEEN WHAT STREETS.	LENGTH IN FEET.					
		4-in	6-in.	8-in.	10-in.	12-in.	Total.
1 Aiken	South-westerly to Cheever	....	14	.....	.....	.....	14
Aiken av	River street and Ludlam	....	366	.....	.....	.....	366
Aiken av	South-westerly from Cumberland road	....	102	.....	.....	.....	102
B	Easterly from South Wilder	...	128	.....	.....	.....	128
Bachman	Extended south-westerly	179	3	.....	.....	.....	182
Beach	Northerly to Sixth street	....	120	.....	.....	.....	120
Blodgett	Emery and Forrest	....	519	.....	.....	.....	519
Blossom	Extended westerly	....	48	.....	.....	.....	48
Cambridge	Extended southerly	272	.....	.....	.....	.....	272
Chester	Extended northerly to Princeton	....	78	.....	.....	.....	78
2 Cheever	Cabot and Pawtucket	....	.....	1229	.....	.....	1,229
Crane av	Westerly from School	209	.....	.....	.....	.....	209
Crawford	Northwesterly from Gershom	....	230	.....	.....	.....	230
Crescent	Chelmsford and Blodgett	....	328	.....	.....	.....	328
Cross	Common street westerly	....	89	.....	.....	.....	89
3 Coolidge	South-westerly to Cheever	....	15	.....	.....	.....	15
D	Easterly from South Loring	....	218	.....	.....	.....	218
Dalton	Extended South Easterly	....	81	.....	.....	.....	81
Eighteenth	Bridge street easterly	....	569	.....	.....	.....	569
Emery	Westerly from Crescent	....	155	.....	.....	.....	155
Exeter	Northerly from Dalton	....	240	.....	.....	.....	240
Gershom	North-easterly from Mt. Hope	....	520	.....	.....	.....	520
Gibson	Southerly from Westford	....	146	.....	.....	.....	146
Gold	Easterly from School	260	.....	.....	.....	.....	260
4 Hale	Westerly from Thorndike	....	428	.....	.....	.....	428
Humphrey	Extended northerly	....	587	.....	.....	.....	587
5 Lawrence	Opposite Lowell Cemetery	....	764	.....	.....	.....	764
Leverett	Extended southerly	86	.....	.....	.....	.....	86
6 Lincoln	Hales Brook bridge	...	.....	.....	48	.....	48
Livingston av	Extended northerly	...	300	.....	.....	.....	300
7 Moore	Gorham and Bleachery	....	.....	573	.....	.....	573
New Walker	Extended southerly	....	48	.....	.....	.....	48
Perry	Extended southerly to Rogers	....	.....	183	.....	.....	183
	Carried forward	1006	6096	1985	48	.....	9,135

Low Service — Water Pipes Laid in 1890 (continued).

STREETS.	BETWEEN WHAT STREETS.	LENGTH IN FEET.					
		4-in	6-in.	8-in.	10-in.	12-in.	Total.
	Brought forward	1006	6096	1985	48	.....	9,135
Perry	Southerly from Rogers	....	610	.....	.....	.....	610
Palmer	Merrimack and Market	....	.....	.....	.....	450	450
Pawtucket	Easterly to Ward	....	115	.....	.....	.....	115
Rolfe	Northerly from Broadway	....	595	.....	.....	.....	595
St. Hyacinthe	Extended southerly	...	241	.....	.....	.....	241
Suffolk	Southwesterly from Hall	....	.....	.....	.....	232	232
Tanner	South-westerly to Plain	....	335	.....	.....	.....	335
8 Tucker	South-westerly to Cheever	...	14	.....	.....	.....	14
Ward	Extended north-westerly to Pawtucket	....	47	.....	.....	.....	47
Warren court	Southerly from Church	174	.....	.....	.....	.....	174
Weed	Easterly from Gorham	....	201	.....	.....	.....	201
West Fourth	Extended north-westerly	....	48	.....	.....	.....	48
West Ninth	Westerly from Bridge	260	.....	.....	.....	.....	260
	Hydrants	...	106	67	.....	.....	173
Laid in 1890		1440	8408	2052	48	682	12,630

1	Less 4-inch taken out, Aiken street	12	
2	Less 4-inch taken out, Cheever street	253	
2	Less 6-inch taken out, Cheever street	532	
3	Less 4-inch taken out, Coolidge street	10	
4	Less 4-inch taken out, Hale street	240	
5	Less 4-inch taken out, Lawrence street	764	
6	Less 6-inch taken out, Lincoln street	48	
7	Less 4-inch taken out, Moore street	274	
8	Less 4-inch taken out, Tucker street	12	
	Less total pipe taken out	2,145	2145
			10,485

Low Service — List of Hydrants Set During the Year 1890.

STREETS.	LOCATION.
Exeter	Easterly side, 29 ft. north of Dalton st.
Gershom	North-westerly side, at Crawford st.
Humphrey	Easterly side, 959 ft. uortherly from Methuen st.
††Lawrence	South-westerly side, in Lowell Cemetery stable yard.
Lawrence	In front of American Bolt Co.'s yard.
Livingston av	Westerly side, about 153 ft. northerly from Princeton st.
Lowell Hospital	In yard on Pawtucket st. side.
*Merrimack	Opposite Palmer st.
*Market	Opposite Palmer st.
Palmer	Easterly side, near corner of Merrimack st.
Palmer	Easterly side, near corner of Market st.
Perry	Westerly side, 43 ft. north of Rogers st.
Perry	Easterly side, 571 ft. south of Rogers st.
*Prince	On corporation line, at south-east corner of finishing mills.
Aiken av	South-easterly side, about 25 ft. south-west of Cumberland road.
Bachman	Southerly side, 445 ft. from Hamblet st.
Blodgett	Westerly side, near south line of Emery st.
*Central	At north-east corner of Appleton.
Chester	Easterly side, at Princeton st.
Cheever	North-easterly side, at north-west corner of Aiken st.
†Cheever	North-easterly side, at north-west corner of Coolidge st.
Cheever	North-easterly side, at north-west corner of Tucker st.
Cheever	North-easterly side, 473 ft. north-west of Tucker st.
*Dutton	North-westerly side, in crossing to Merrimack Co.'s office.
*Dutton and Fletcher	36.5 ft. south-north line Dutton; 19.4 ft. west of east line Fletcher st
Eighteenth	Northerly side, 408 ft. from Bridge st.
Rolfe	Easterly side, 580 ft. northerly from Broadway.
St. Hyacinthe	At C. B. Coburn's oil tanks.
*Suffolk	Opposite office of Tremont & Suffolk mills.
†††Tanner	South-easterly side, 158 ft. from Plain st.

*Lowry hydrants.

†Flush hydrant on Coolidge st. taken out.

††Flush hydrant, private.

†††Changed from front of glue factory.

Low Service — List of Stop Gates Set During the Year 1890.

STREETS.	LOCATION.	4-inch.	6-inch.	8-inch.	12-inch.
Aiken	14 ft. north-westerly, from south-easterly line Aiken, on north-easterly line Cheever		1		
Aiken av	14 ft. north of south line Aiken avenue, on easterly line River street		1		
Aiken av	12.7 ft. north-westerly, from south-easterly line Aiken av.; 11.7 ft. south-easterly from south-westerly line Cumberland road.		1		
B	14 ft. south of north line B street, on easterly line South Wilder street		1		
Beach	14 ft. west of east line Beach street, 3 ft. south of south line Sixth street		1		
Blodgett	10 ft. east of west line Blodgett street, on south line Emery street		1		
Bridge	21 ft. west of east line Bridge street, 15 ft. south of north line Eighteenth street		1		
Cheever	18 ft. south-west of north-east line Cheever street, 1.3 ft. north-west of north-west line Cabot street			1	
Cheever	14 ft. south-west of north-east line Cheever street, 0.5 ft. north-west of north-west line Aiken street			1	
Crane av	10.7 ft. north of south line Crane avenue, on westerly line of School street	1			
Crawford	12.3 ft. north-east of south-west line Crawford street, on north-westerly line Gershom street		1		
Crescent	10 ft. north of south line Crescent street, on westerly line of Chelmsford street		1		
Coolidge	14 ft. south-easterly from north-westerly line Coolidge street, on north-easterly line Cheever street		1		
Eighteenth	13 ft. south of north line Eighteenth street, on easterly line of Bridge street		1		
Gershom	15 ft. south-easterly from north-westerly line Gershom street, on north-easterly line of Mt. Hope street		1		
Gold	14.6 ft. north of south line Gold street, on easterly line of School street	1			
Gibson	12 ft. west of east line Gibson street, on southerly line Westford street		1		
Hale	About 22 ft. north of south line Hale street, 3.3 ft. east of west line Thorndike street		1		
Merrimack	47 ft. north-easterly from south-westerly line Merrimack street, 15 ft. north-westerly from south-easterly line Palmer street.				1
Moore	17.7 ft. southerly from northerly line Moore street, on easterly line Gorham street			1	
Moore	15 ft. south of north line Moore street, on westerly line Lawrence street			1	
Palmer	20 ft. north-west of south-east line Palmer street, on south-westerly line Merrimack street				1
Palmer	20.4 ft. north-west of south-east line Palmer street, 2 ft. north-east of north-east line Market street				1

Low Service—List of Stop Gates Set During the Year 1890 (continued.)

STREETS.	LOCATION.	4-inch.	6-inch.	8-inch.	12-inch
Perry	33 ft. west of east line Perry street, 1 ft. north of north line Rogers street			1	
Perry	13 ft. east of west line Perry street, on south line Rogers street		1		
Rolfe	9 ft. west of east line Rolfe street, on northerly line Broadway		1		
School	17½ ft. east of west fence line School street, 17½ ft. north of south line Gold street			1	
Tucker	10 ft. north-westerly from south-easterly line Tucker street, on north-easterly line Cheever street		1		
Ward	Opposite Harris' mill, and is 53½ ft. south of wall		1		
Warren ct	12.6 ft. easterly from westerly line Warren court, on southerly line Church street	1			
Weed	10.4 ft. south of north line Weed street, on easterly line Gorham street		1		
West Ninth	10 ft. south of north line West Ninth street, 1 ft. west of west line Bridge street	1			
Wilder	23.2 ft. east of west line Wilder street, 2.4 ft. north of south line Broadway			1	
Fire Service	At Harris' mill, Pawtucket street Lowell hospital, gate Pawtucket street	1	1		
Cheever	6-inch gate on old line near Tucker street taken out				
Moore	4-inch gate near westerly line Bleachery street taken out				
Berkeley	About 13 ft. east of westerly side, on southerly line Rogers street	1			
Rea	About 16 ft. east of westerly side, on southerly line Rogers street	1			
Rea	About 12 ft. east of westerly side, about on northerly line Berwick street	1	1		

High Service — Water Pipes Laid in 1890.

STREETS.	BETWEEN WHAT STREETS.	LENGTH IN FEET.		
		6-in.	10-in.	Total.
Berkley	Rogers and Berwick	427		427
Berwick	Rea street, westerly	227		227
Hanover Avenue	Extended northerly	612		612
Rea	Rogers and Berwick	1001		1001
Rogers	Southerly to Berkley		5	5
	Hydrants	18		18
	Laid in 1890	2285	5	2290
	High Service laid previous to 1890			20,252
	Total High Service to Jan. 1, 1891			22,542

High Service List of Hydrants Set During the Year 1890.

STREETS.	LOCATION.
Hanover avenue	Westerly side, 695 feet north of Laurel street.
Rea	Westerly side, 15 feet from Berwick street.
Rogers	Northerly side, opposite Berkley street.

Brought forward	10,485
Low Services laid previous to 1890	453,604
Total Low Service to Jan. 1, 1891	464,089
Total High Service to Jan. 1, 1891	22,542
Total High and Low Service to Jan. 1, 1891	486,631

Total in miles, 92.17

PROPERTY AT PIPE YARD JAN. 1, 1891.

CAST-IRON PIPE AND SPECIALS.

DIAMETER IN INCHES.	4	6	8	10	12	16	20	24	30
Lengths	79	17	78	185	34	30	15	6	3
Sleeves	5	12	3	5	4	7	1	8	7
Caps	17	14	24	....	14	3	1	1	..
Covers	2	10	11	2	8	4	10	4	..
Plugs	4	10	14	6	5	..	..	..	..

SPECIALS.

DIAMETER IN INCHES.	10 x 10	4 x 4	6 x 4	6 x 6	8 x 6	8 x 8	10 x 6	10 x 8	12 x 4	12 x 6	12 x 8	12 x 10	12 x 12	16 x 6	16 x 8	16 x 12	16 x 16	24 x 6	8 x 4
Three-ways	..	3	..	7	3	..	3	4	..	5	3	3	1	.	..	..	..	..	2
Four-ways	..	7	..	8	2	6	..	1	..	6	3	..	4	2	1	2	1	..	..
Reducers	4	..	2	..	17	..	..	2	..	7	8	2	..	..		1	..	..	..

Stop gates, 2 12-inch, 2 10-inch, 4 4-inch; 1000 feet 2-inch wrought-iron pipe; 3 reels 1-inch lead pipe, 4 reels 3-4-inch lead pipe, 1 reel 5-8-inch lead pipe; 3 Chapman post hydrants, 3 Lowry hydrants, 12 Boston flush hydrants; 30 joints earthen sidewalk boxes; 82 1-foot extensions; 4 3-feet extensions, 5 2-feet extensions; 26 round collars, 12 square collars; 12 gate frames and covers, 6 iron gate boxes, 3 hydrant frames and covers, 6 meter frames and covers; 1 pipe tester; 11 old style hydrants; 3 hand ratchets; 3 hammers, 3 paving hammers; 5 rakes; 45 assorted gate wrenches; 34 picks; 2 rammers; 4 paving mauls; 2 mauls; 3 packing irons; 4 saws; 1 wood saw and horse; 5 striking hammers; 2 patterns for making gate-boxes; 1 spirit level; 4 scrapers for blasting purposes; 4 lbs. pipe wedges; 3 yarn irons; 3 ladles; 25 lanterns; 1 pail and dipper; 1 battery; 6 crow-bars; 3 lantern globes; 5 shovels; 2 ice chisels; 1 axe; 6 scrub brooms; 1 boat, 3 oars; 7 hoes; 1 dip-net; 4 pails; 3 oil cans; 1 pint lubricating oil; 1 pike pole; 50 feet rubber hose; 17 pick-handles; 1 buck saw; 2 saw horses; 2 tool boxes; 2 derricks; 2 fall ropes; 2 set blocks; 2 tongs for cleaning sidewalk boxes; 7 draft chains; 40 lbs. dualin; 24 second-hand hydrants; 12 wheelbarrows; 1 bag pipe-clay; 3 lbs. cement; 2-3 ball jute packing; 1 tin pump; 1 Edson pump; 25 hundred pig lead; 1 sewer block-tin dipper; 1-4 lb. oatmeal; 6 gate boxes; 1 bogie furnace; 4 lead pots; 1 furnace; 5 12-inch eighth turns; 2 10-inch eighth turns; 8 8-inch eighth turns; 2 12-inch quarter turns; 2 8-inch quarter turns; 1 blacksmith shop, set blacksmith tools; 1 work-shop; 1 carriage house; 1 stable; 1 store-shed; 2 thermometers; 1 step-ladder; 1 clock; 3 brooms; 3 Johnson pumps; 100 feet tubing; 1 nail puller; 1 map distributing mains; 53 lead connections; 1 wooden pail; 1 5-gallon can; 2 1-2-gallon cans; 3 1-4-gallon cans; 6 caulking sets; 1 barrel paint; 2 brass goose-necks; 2 coal stoves; 1 claw hammer; 1 coal hod; 1 stove tank; 1 counter scales; 1 platform scales; 2 pipe vises; 7 pipe tongs; 2 pipe cutters; 3 ratchet cutters; 2 ratchet dies; 8 monkey wrenches; 2 common wrenches; 4 tapping machines; 7 die stocks; 2 Stilson wrenches; 1 dipper for drinking fountain; 3 screw-drivers; 2 mallets; 1 bit stock; 1 washer cutter; 1 2-inch augur; 1 bench block; 1 set of numbers; 1 directory; 1 hose nozzle; 1 pair snips; 1 plumber's small tool box; 4 paint brushes; 2 pipe benches; 30-feet rubber hose; 800 feet 2 1-2-inch hose; 10 assorted gravel screens; 5 assorted files; 15 lbs. cotton waste; 3 trowels; 5 lbs. nails; 10 lbs. spikes; 1 keg axle grease; 1-4 box soap; 40 lbs. dualin; 14 second hand hydrants; 9 Chapman valves; 9 pair rubber boots; 350 lbs. steel drills; 1 spirit level; 2 solder moulds; 1 map plan Lowell Water Works; 20 lbs. raw umber; 1 desk; 40 lbs. bolts and nuts; 2 light wagons; 1 meter wagon; 2 express wagons; 1 single truck; 1 double truck; 4 horse blankets; 4 sheet blankets; 1 buffalo robe; 1 duster; 2 pungs; 1 light sleigh; 3 horse brushes; 7 single harnesses; 1 double harness; 3 mane brushes; 4 halters; 3 curry-combs; 4 hay-forks; 2 manure forks; 2 wagon-jacks; 2 wagon wrenches; 2 canvas covers; 1 rubber cover; 1 oil cloth cover; 1 1-2 tons hay; 10 bushels oats; 4 horses.

Forty 1-inch corporation cocks; 36 1-inch couplings; 46 1-inch cellar cocks; 19 1-inch sidewalk cocks; 59 1-inch sidewalk cocks for iron pipe; 5 3-4 corpora-

tion cocks; 46 3-4 couplings; 52 3-4 sidewalk cocks; 63 3-4 cellar cocks; 30 1 1-2-solder nipples; 36 3-4-solder nipples, brass; 46 1-inch solder nipples, brass; 36 1-inch solder nipples, iron; 4 1 1-2-inch solder nipples, iron; 151 lbs. solder; 3 8-inch sleeves; 6 6-inch S curves; 1 4-inch three-way; 1 6-inch three-way; 1 16x6 three-way; 1 12-inch three-way; 1 12-inch four-way; 1 24x6 three-way; 1 charcoal furnace; 1 gas furnace; 1 naptha furnace; 4 solder irons; 15 gate spindles; 10 hydrant spindles; 30 hydrant packings for tap; 30 packings for bottom; 60 assorted hydrant packings; 10 packings for 4-inch gate, 12 for 6-inch gate, 6 for 8-inch gate, 3 for 12-inch.

Meters and Meter Supplies and Tools.

Three 2-inch Worthingtons, 1 2-inch Worthington, (second hand) 3 1-inch Worthingtons (second hand); 2 1 1-2-inch Frost, 2 3-4-inch Frost, 1 5-8-inch Frost; 1 3-4-inch Crown, 7 5-8-inch-Crowns, 1 5-8-inch Crown (second hand); 2 1-inch Hersey, 5 3-4-inch Hersey; 3 tops for 1-inch Crown, 5 3-4-tops for Crown, 4 5-8-inch tops for Crown; 18 5-8-inch leads for Worthington connections, 6 1-inch leads for Worthington connections; 50 5-8-inch brass meter unions; 1 tool bag; 3 Stilson wrenches; 1 monkey wrench; 1 pair pliers; 2 screw drivers; 1 file; 1 brass hand lamp and 1 seal; 4 lbs. sealing wax; 1 gallon naptha; 1 pail and tank for testing meters.

Property and Tools at Pumping Station.

One pipe vise; 1 work-bench; 1 portable forge; 8 sets brasses for engine; 2 sets differential blocks; 100 feet 2-inch rope; 1 set fire-irons; 1 brass hydrant; 1 axe; 11 finished wrenches; 3 hand saws; 2 jack-screws; 10 cold chisels; 2 ratchet drills; 1 socket drill; 4 calking chisels; 1 barometer; 1 office desk; 2 indicators; 1 oil cupboard; 2 oil dishes; 1 platform scales; 7 crow-bars; 64 feet 1-inch iron chain; 16 eye bolts; 1 truck; 1 key wrench for air pump; 2 iron wheel barrows; 1 buck saw; 2 gas tongs; 2 gas lamps; 1 high grade thermometer; 4 brass bolts; 11 wrenches for Morris engine, 11 for Worthington; 3 sledge hammers; 10 drills, assorted sizes; 3 bit-stocks; 1 25-foot ladder; 1 20-foot ladder; 1 18-foot ladder; 1 pair steps; 1 hoe; 2 rakes; 1 small die plate; 1 fore plane; 6 monkey wrenches; 1 piece 2-inch rope; 4 chisel bars; 4 small taps; 4 socket wrenches; 2 14-quart iron pails; 4 hand hammers; 1 grind-stone; 1 anvil; 9 gas tongs; 1 hydrant wrench; 2 clocks; 1 full set dies (from 1-4-inch to 2-inch, right and left); 2 die-stocks and bushings; 2 sets blocks (3 5-8-inch chains); 1 24-inch elbow; 1 scythe; 1 snath; 6 chairs; 1 office table; 2 enigne lathes; 1 speed lathe; 1 upright drill; 31 turning tools; 1 12-inch chuck; 1 No. 3 drill chuck; 1 No. 2 drill chuck; 16 twist drills; 3 reamers for Desper meters; 4 small reamers; 5 lanterns.

Extras.

Two bench vises; 1 steel wrench; 1 meter chuck; 1 black walnut cabinet; 1 small side valve engine; 3 extra twist drills; 12 lathe-dogs; 6 hack-saws; 1 hay-scale; 1 furnace pot; 2 trowels; 1 tar-kettle; 2 wooden wheel barrows; 10x4-inch rubber valves; 1 set 1-16 to 1-inch reamers; 1x4-inch tap; 2 5-8-inch taps; 2 cut nippers; 1 hand vise; 1 set figures; 3 thermometers; 2 No. 2 drill chucks; 1 pipe cutter; 1 lot old bolts; several sticks of lumber; 1 18-inch monkey wrench; 1 pair snips.

Property and Tools at Reservoir.

Three rakes; 2 scythes and snaths; 2 crow-bars; 2 long handled spades; 1 long handled shovel; 3 short handled shovels; 1 wooden shovel; 2 picks; 1 broom; 1 ice-chisel; 1 sod cutter; 1 monkey wrench; 1 scuff-hoe; 1 hoe; 1 lawn mower; 1 5-tine fork; 1 iron rake; 1 saw; 1 square; 50-feet hose; 1 hammer; 1 axe; 1 wheel barrow.

mug; 1 glass tumbler; 1 hair brush; 1 gas stove; 1 gas radiator; 1 gas lamp; 14 inkstands; 1 set bottles for water samples; 1 settee; 1 set Lowell Water Works plans.

Property in Water Board and Superintendent's Office

Eighteen chairs, 5 high chairs and stools; 1 letter press; 7 desks with drawers; 3 standing desks with drawers; 4 office tables; 1 cabinet letter file; 2 bill cabinets; 1 bill holder; 1 black walnut cabinet; 1 safe; 1 clock; 4 waste baskets; 7 spittoons; 4 street wrenches; 1 rubber mat; 2 brooms; 1 dust pan; 1 map distributing mains; 1 map Water Works system; 1 map of Lowell; 1 atlas of Lowell; 1 water gauge; 1 pressure and recording gauge; 1 screw driver; 1 hammer; 1 key rack; 1 hat rack; 1 instrument for testing capacity of engines; 1 umbrella rack; 1 water cooler; 1 feather duster; 1 type writing machine; 1 glass drinking

Report of the Engineer.

OFFICE OF CITY ENGINEER,
LOWELL, MASS., Jan. 1, 1891.

To the Lowell Water Board:

GENTLEMEN, — The Eighteenth Annual Report of the work done by the engines at the pumping station of the Lowell Water Works is as follows:—

The records of the work of the engines have been kept by Mr. James P. Roberts, Engineer, in the same careful and complete manner as formerly and from them the following tables, showing the duty, etc., have been calculated.

As is customary, all the coal used at the pumping station has been charged to the pumping account, although, by reason of the addition of a meter repairing department in the basement, more steam has been taken from the boilers for heating than formerly.

The cost of the new Wheelock packing and valve chest for low pressure cylinder for the Morris engine, the latter being now on hand, in case of emergency, have not been charged to the pumping

account, being considered extraordinary repairs.

During sixty-nine days of the year the Morris and Worthington engines have been run together. The Morris engine has been run two hundred and sixty-nine and the Worthington engine one hundred and five nights. The greatest quantity pumped during one day by both engines was 10,045,660 gallons.

The cost of pumping one million gallons from the low service reservoir to the high service reservoir was $8.99 which added to the average cost of pumping the same quantity into the low service reservoir makes the total cost of pumping one million gallons into the high service reservoir, $16.45.

The total quantity pumped into the low service reservoir during the year is 1,961,902,750 gallons, an increase over last year of 270,098,050 gallons.

Table Showing Work Done With Morris Engine (Beam and Fly Wheel) and Boilers for each Month During the Year 1890.

MONTHS.	No. of days' pumping.	Av. No. of hours' pumping per day.	Number of hours' pumping per month.	No. of strokes made per month.	Average No. of strokes made per minute.	Average head, including friction, in feet.	Quantity pumped per month, in U. S. gallons.	Average quantity pumped per day, in U. S. gallons.	No. galls. of water raised into reservoir per lb. total coal consumed.	Duty in lbs., 1 foot high, with 100 lbs. coal, used in pumping only, no deduction for ashes or clinkers.	Duty on total coal consumed, no deduction for ashes or clinkers.
January	30	22–15	667–15	484,873	12.11	162.41	155,159,360	5,171,979	512	81,684,981	69,288,063
February	16	21–04	337–00	248,035	12.27	162.61	79,371,200	4,960,700	416	64,875,269	56,374,831
March	30	21–44	651–45	488,662	12.50	163.61	156,371,840	5,212,395	452	70,845,623	61,612,718
April	26	22–22	581–40	441,237	12.64	163.42	141,195,840	5,430,609	488	77,198,158	66,471,000
May	22	20–16	446–00	336,188	12.56	163.37	107,580,160	4,890,007	500	79,475,382	68,032,109
June	23	21–30	494–25	356,910	12.03	164.06	114,211,200	4,965,704	458	72,665,533	62,588,478
July	26	23–44	617–00	447,910	12.10	165.07	143,331,200	5,512,738	490	78,651,696	67,411,891
August	22	23–04	507–30	371,665	12.21	163.69	118,932,800	5,406,036	486	77,334,214	66,331,636
September	26	24–00	624–00	457,314	12.21	163.96	146,340,480	5,628,480	478	75,802,070	65,305,642
October	16	22–02	352–30	255,032	12.06	164.49	81,610,240	5,100,640	476	76,002,860	65,272,000
November	19	22–22	425–00	309,327	12.13	163 91	98,984,640	5,209,718	551	89,546,771	75,203,333
December	27	23–32	635–30	460,025	12.06	165.08	147,208,000	5,452,148	554	91,063,553	76,194,632
Totals and averages .	283	22–24	6,339–35	4,657,178	12.24	163.81	1,490,296,960	5,266,067	488	77,741,518	66,611,077

Table Showing Work Done with Worthington Duplex Engine for each Month During the Year 1890.

MONTHS.	No. of days' pumping.	Av. No. of hours' pumping per day.	Number of hours' pumping per month.	No. of strokes made per month.	Average No. of strokes made per minute.	Average head, including friction, in feet.	Quantity pumped per month, in U. S. gallons.	Average quantity pumped per day, in U. S. galls.	No. galls. of water raised into reservoir per lb. total coal consumed	Duty in lbs., 1 foot high, with 100 lbs. coal, used in pumping only, no deduction for ashes or clinkers.	Duty, on total coal consumed, no deduction for ashes or clinkers.
January	. .	. . .	. . . .	. . . .	. . .	. . .	. . . . .	. . . .	. . .	. . .	. . . .
February	13	23–32	306–00	223,131	12.15	162.91	69,170,610	5,320,816	373	57,714,093	50,675,788
March	. .	. . .	. . . .	. . . .	. . .	.	. . . . .	. . . .	. . .	. . .	. . . .
April	. .	. . .	. . . .	. . . .	. . .	. . .	. . . . .	. . . .	. . .	. . .	. . . .
May	8	20–11	161–30	128,071	13.22	163.40	39,702,010	4,962,751	401	62,001,414	54,556,238
June	10	20–36	206–00	124,713	10.09	165.68	38,661,030	3,866,103	388	61,928,371	53,542,889
July	16	22–44	363–45	162,195	7.43	166.28	50,280,450	3,142,528	363	61,040,324	50,254,253
August	13	19–14	250–00	168,827	11.26	163.98	52,336,370	4,025,875	400	62,739,797	54,681,488
September	6	23–30	141–00	66,651	7.88	166.28	20,661,810	3,443,635	388	65,671,273	53,820,815
October	19	22–42	431–15	285,622	11.04	164.12	88,542,820	4,660,148	423	67,393,844	57,862,760
November	13	19–52	258–15	165,908	10.71	164.20	51,431,480	3,956,268	437	70,310,726	59,796 973
December	19	21–57	417–10	196,191	7 84	166 06	60,819,210	3,201,011	390	65,809,530	53,989,988
Totals and averages .	117	21–40	2,534–55	1,521,309	10.00	164.78	471,605,790	4,030,819	396	63,771,588	54,439,063

Table Showing Amount of Coal Used for Morris Engine at Pumping Station during the Year 1890.

MONTHS.	COAL CONSUMED.			
	For starting fires, in lbs.	When pumping, in lbs.	For banking fires, in lbs.	Total per month, in lbs.
January.....	34,200	257,100	11.800	303,100
February....	18,000	165,800	7,000	190,800
March.....	33,600	300.960	11,500	346,060
April	29,400	249,100	10.800	289,300
May	22,800	184 300	8.200	215,300
June.....	25,200	214,900	9,400	249,500
July.....	30,600	250,700	11,200	292,500
August.....	25,800	209,800	9,000	244,600
September....	31,200	263,800	11,200	306 200
October.....	18,000	147,200	6,200	171,400
November....	21,000	151,000	7,800	179,800
December	31,800	222,400	11,600	265,800
Totals.....	321,600	2,617,060	115,700	3,054,360

Table Showing Amount of Coal used for Worthington Duplex Engine at Pumping Station during the Year 1890.

MONTHS.	COAL CONSUMED.			
	For starting fires, in lbs.	When pumping, in lbs.	For banking fires, in lbs.	Total per month, in lbs.
January	.....	.....	.....	.....
February	17,400	162,720	5,200	185,320
March	.....	.....	.....	.....
April	.....	.....	.....	.....
May	8,700	87,200	3,200	99,100
June	9,900	86,200	3,600	99,700
July	18,300	114,150	6,200	138,650
August	12,600	114,000	4,200	130,800
September	7,200	43,600	2,400	53,200
October	22,200	179,700	7,400	209,300
November	13,200	100,100	4,400	117,700
December	21,900	127,900	7,000	155,900
Totals	130,500	1,015,570	43,600	1,189,670

Table Showing Work done with Worthington High-Service Engine for each month during the year 1890.

MONTHS.	No. of days' pumping.	Av. No. of hours' pumping per day.	Number of hours pumping per month.	Number of strokes made per month.	Av. No. of strokes made per minute.	Av. head, including friction, in feet.	Quantity pumped per month, in U. S. gallons.	Av. quantity pumped per day in U. S. gallons.	No. gals. water pumped into reservoir per lb. of total coal consumed.	Coal in lbs., used when pumping.
January . .	5	13.	65.	133,115	34.13	78.67	1,863,610	372,722	318	5,860
February . .	4	16.15	65.	138,543	35.52	78.67	1,939,602	484,900	298	6,500
March . . .	3	17.40	53.	96,338	30.29	78.67	1,348,732	449,577	307	4,400
April . . .	5	15.30	77.30	146,883	31.59	78.67	2,056,362	411,272	294	7,000
May . . .	5	14.48	74.	144,218	32.48	78.67	2,019,052	403,810	306	6,600
June . . .	5	15.09	75.45	152,901	33.64	78.67	2,140,614	428,123	298	7,180
July	7	19.06	133.45	266,428	33.20	78.67	3,729,992	532,856	301	12,400
August . . .	6	15.20	92.	195,722	35.46	78.67	2,740,108	456,685	304	9,000
September .	5	17.	85.	163,523	32.06	78.67	2,289,322	457,864	309	7,400
October . .	6	17.05	102.30	190,337	30.95	78.67	2,664,718	444,120	310	8,600
November .	4	17.45	71.	149,557	35.11	78.67	2,093,798	523,450	299	7,000
December .	5	16.18	81.30	171,225	35.02	78.67	2,397,150	479,430	307	7,800
Totals and av.	60	16.16	976.	1,948,790	33.28	78.67	27,283,060	454,718	304	89,740

PUMPING STATION, MORRIS ENGINE.

Running Expenses for the Year 1890.

Pay of engineers and firemen	$ 3,441.02
$26\frac{123}{2000}$ tons coal (Wilkesbarre, 1890), at $5.171	137.64
$50\frac{440}{2000}$ tons coal (Cumberland, 1890), at $2.375	119.26
$57\frac{270}{2000}$ tons coal (Cumberland, 1890), at $4.396	253 36
$64\frac{130}{2000}$ tons coal (Cumberland, 1890), at $4.416	285.10
$682\frac{1685}{2000}$ tons coal (Cumberland, 1889 and 1890), at $4.366	2,981.29
$645\frac{600}{2000}$ tons coal (Pocahontas, 1890), at $4.357	2,811.57
2.17 cords of wood	7.55
Gas for lighting works	15.50
Electric light	242.06
146.30 gallons cylinder oil, at 50 cents	73.15
114.90 gallons machine oil, at 25 cents	28.73
10.00 gallons lard oil, at 55 cents	5.50
153.52 pounds cotton waste, at 12 cents	18.42
30.60 pounds Eureka packing, at 60 cents	18.36
32.30 pounds flax packing, at 25 cents	8.07
13.50 pounds rubber packing, at 30 cents	4.05
8.00 pounds Tiger packing, at 50 cents	4.00
24.75 pounds metallic packing, at $1.15	28 47
Repairs on engine	146.43
Repairs on boilers	105 42
Tools and stock	17.36
Sundries	21.28
Total	$10,773.59

Cost of pumping water into reservoir per million gallons	$ 7.23
Cost of pumping water one foot high per million gallons	$.04\frac{41}{100}$
Wheelock packing for high pressure cylinder	424.05
Valve chest for low pressure cylinder (on hand)	329 19

PUMPING STATION, WORTHINGTON ENGINE.

Running Expenses for the Year 1890.

Pay of engineers and firemen	$ 1,086.64
$240\frac{1470}{2000}$ tons coal (Cumberland, 1889 and 1890), at $4 366	1,051.05
$354\frac{2000}{2000}$ tons coal (Pocahontas, 1890), at $4.357	1,542.81
0.68 cords wood	2.38

Gas for lighting works	4.90
Electric light	76.44
46.20 gallons cylinder oil, at 50 cents	23.10
36.28 gallons machine oil, at 25 cents	9.07
48.48 pounds cotton waste, at 12 cents	5.81
9.65 pounds Eureka packing, at 60 cents	5.79
10.20 pounds flax packing, at 25 cents	2.55
2.50 pounds Tiger packing, at 50 cents	1.25
Repairs on engine	4.07
Repairs on boilers	33.29
Tools and stock	4.69
Sundries	6.72
Total	$3.860.56

Cost of pumping water into reservoir per million gallons	$ 8.19
Cost of pumping water one foot high per million gallons	.04 97/100

Reservoir, Beacon Street, 1890.

MONTHS.	Depth in Feet.	Quantity in U. S. Gallons.	TEMPERATURE IN DEGREES.	
			Of Water.	Of Air.
January	19.64	29,907,321	32.52	29.90
February	19 26	29,272,003	32.14	31.63
March	18.96	28,768,911	33.40	33.80
April	19.16	29,110,134	44.46	47.25
May	19.14	29,073,894	58.79	60.11
June	18.79	28,486,808	63.56	68.28
July	18.83	28,553,444	71.95	74.50
August	19 29	29,316,696	72.10	71.10
September	18.37	27,791,673	64.18	64.10
October	18.89	28,645,158	52.54	50.03
November	19.45	29,580,907	41.00	40 28
December	18.53	28,044,666	32.05	22 91

Table showing the average monthly and daily consumption of water for the year 1890.

MONTHS.	Gallons per month.	Gallons per day.
January	156,067,904	5,034,449
February	148,889,644	5,317,487
March	156,163,252	5,037,524
April	140,917,208	4,697,240
May	145,457,334	4,692,172
June	157,047,579	5,234,919
July	189,153,440	6,101,724
August	171,552,031	5,533,936
September	170,145,613	5,671,520
October	166,797,627	5,380,569
November	152,243,705	5,074,790
December	206,905,364	6,674,367
Totals and averages	1,961,340,701	5,373,536

WATER ANALYSIS.

As heretofore samples of water have been taken each month from the river opposite the filtering basin and sent to the State Board of Health for analysis.

Respectfully submitted,

GEO. E. EVANS,

City Engineer.

ANNUAL REPORT

OF THE

OVERSEERS OF THE POOR,

WITH ACCOMPANYING PAPERS,

FOR THE

CITY OF LOWELL,

FOR THE YEAR 1890.

LOWELL, MASS.:
COURIER PRESS: MARDEN & ROWELL.
1891.

CITY OF LOWELL.

In Board of Aldermen, May 19, 1891.

Read and ordered on file. Sent down for concurrence.

MICHAEL J. DOWD,
City Clerk.

In Common Council, May 26, 1891.

Read and ordered on file in concurrence.

DAVID CHASE,
Clerk.

REPORT OF THE SECRETARY

OF THE

OVERSEERS OF THE POOR.

LOWELL, Jan. 31, 1891.

To the Board of Overseers of the Poor.

GENTLEMEN: — I have the honor to submit the following report of the administration of the Secretary's office for the year 1890.

AID RENDERED.

During the past year wood, coal, and provisions have been supplied to 583 families, comprising 1,775 persons, 776 males and 999 females. Of this number 654 were state paupers, and 189 were paupers of other cities and towns, leaving 932 persons aided who have a settlement in Lowell.

The value of above aid was $5,810.26. Of this amount $1,210.62 was reimbursed to the city by the commonwealth and cities and towns, leaving a balance of $4,599.64 as the net amount expended for our own poor, as partial support at their homes. In addition to the above the sum of $2,122.86 has been paid as cash allowances, making the total amount paid out as temporary aid $7,933.12.

HOSPITALS.

The prevalence of typhoid fever in the city has greatly added to the number of patients admitted to the hospitals. The number received into St. John's Hospital was 157, Lowell Hospital, 7; total, 164, for whose care this department was responsible. Of this number 104 were state paupers, 14 were chargeable to cities and towns, and 46 had a settlement in Lowell.

The total expense caring for these was $2,720.04. Amount reimbursed by the commonwealth and cities and towns was $1,326.00, leaving $1,394.04 as the net expense paid by the city.

Number in 1889 was 132, at a total cost of $2,734.25. The principal reason for the expenditure being less in 1890 than in 1889 was that the larger number were state paupers, for which a less sum is paid per week than for others — a fact that would suggest early legislation in favor of a larger sum being allowed by the commonwealth for the proper care of our sick in the hospitals.

INSANE.

Seventy-one persons have been cared for at the state lunatic hospitals, at the expense of the city, 19 more than in 1889, which shows that insanity has increased quite extensively during the year, the asylums throughout the state being overcrowded. Of this number 23 have been cured, returned to Lowell, or died, leaving 48 now at the hospitals on expense to the city.

STATE PAUPERS.

During the year 136 state paupers were sent to the State Almshouse at Tewksbury, 60 less than in 1889.

DECEASED PAUPERS.

One hundred and seven orders for the burials of deceased paupers were given by this department during the past year.

CRIMINALS.

The sum of $219.43 was paid to Middlesex County for the board of criminals, sentenced principally for drunkenness, to the House of Correction, the price of board for such being $1.60 per week, with credit of $.60 per week when able to perform labor.

AMBULANCE.

Three hundred and thirty-three calls have been made with the ambulance during the year ending Dec. 31, 1890.

The fact that only 105 calls were made during the last six months of 1889 indicates the growing demand for this service. Also the fact that a number of calls could not be made, owing to its use, would suggest the necessity of purchasing another ambulance at an early day.

The thanks of the Board should be tendered the Lowell Hospital Association for the kindly loan of their ambulance during the repairs to our own.

DISPENSARY.

The fact that 7084 prescriptions have been filled at the dispensary shows the value of this institution to the sick poor. In this connection I would say that many applicants have been refused an order on the dispensary for the reason that they had no settlement in Lowell or other cities and towns. And the commonwealth will

not reimburse the city for such aid rendered, but will furnish same in their own institution at Tewksbury.

WOOD-YARD.

One hundred and fifty-one cords of wood and 101 tons of coal have been delivered to paupers at their houses during the year, from the wood-yard.

VETERANS.

I would again call your attention to Chap. 298, Acts of 1889, Public Statutes, which provides for aid to be given to veterans and widows of the same at places designated by the Mayor and Board of Aldermen, other than an almshouse, and would recommend that an appropriation of $5000 be asked of the City Council to carry out the provisions of this act.

RULES.

The rules for the government of the Board of Overseers and its officials adopted in 1875 having become obsolete, I would recommend a revision of the same to be presented to the City Council for approval.

In conclusion, I wish to thank the members of the board for their hearty and united support during the past year.

Hoping that my services have been satisfactorily performed, I am,

Very respectfully, your obedient servant,

CHARLES H. RICHARDSON,

Secretary.

REPORT OF INSTITUTIONS

AT

CITY FARM, LOWELL,

FOR THE YEAR 1890.

SUPERINTENDENT'S REPORT.

Office of the Superintendent at City Farm,
Lowell, Dec. 20, 1890.

Gentlemen. — I have the honor to submit to your board my annual report as Superintendent for the year ending Dec. 20, 1890. In rendering this report I shall present the statistics of the institutions, knowing you are well informed on all other matters.

ALMSHOUSE.

The number of inmates in the almshouse Dec. 20, 1889, was two hundred and fifty-one (251). During the year there were admitted three hundred and eleven (311), one hundred and forty-nine males (149) and one hundred and sixty-two females (162), making the whole number for the year five hundred and sixty-two (562). Of this number there were discharged three hundred and sixteen (316), one hundred and forty-six males (146) and one hundred and seventy females (170), leaving the number remaining Dec. 20, 1890, to be two hundred and forty-six (246), one hundred and two males (102) and one hundred and forty-four females (144). Average number supported for the year was two hundred and forty-seven (247). There were nine births in the almshouse during the year, seven males (7) and two females (2).

WORK-HOUSE.

The number of inmates Dec. 20, 1889, was sixty-seven (67). The number committed during the year was one hundred and ninety-four (194), sixty-three males (63) and one hundred and thirty-one females (131). Of this number there were discharged during the year two hundred and four (204), making the whole number for the year two hundred and sixty-one (261), leaving the number remaining Dec. 20, 1890, to be fifty-seven (57). The average number supported for the year was sixty (60). The number on probation for the year was four (4). The causes of the commitments were as follows: For drunkenness, forty-two (42); for second offence, sixty-seven (67); for third offence, sixty-six (66); for common drunkards, twelve (12); larceny, five (5); vagrants, two (2).

REFORM SCHOOL.

The number remaining Dec. 20, 1889, was forty-one (41); admitted, fifty-nine (59); remaining Dec. 20, 1890, forty-three (43), making the whole number for the year one hundred (100). Average for the year was forty-eight (48). (For statistics of the school see Teacher's Report.

INSANE.

The number of insane Dec. 20, 1889, was seventy-four (74). During the year there were admitted twenty-seven (27), eleven males (11) and sixteen females (16), making the whole number for the year one hundred and one (101). Of this number there were discharged twenty-

six (26), twelve males (12) and fourteen females (14), leaving the number remaining Dec. 20, 1890, seventy-five (75), twenty-three males (23) and fifty-two females (52).

DEATHS.

The number of deaths being fifty-seven (57) is the number for all the institutions. Of the fifty-seven who died eighteen were males (18), and thirty-nine were females (39).

EXPENDITURES.

The average number supported in the almshouse being two hundred and forty-seven (247), in the workhouse sixty (60), in the House of Employment forty-eight (48), makes the whole average in all the institutions three hundred and fifty-five (355). The average number in the institutions whose board was paid was thirteen (13), which leaves the actual average number supported at an expense to the city to be three hundred and forty-two (342). The amount of bills paid for all expenses at the institutions at City Farm was forty thousand two hundred and sixty-nine dollars and five cents ($40,269.05), credit for the year was seven thousand four hundred and eighty-four dollars and seventy cents ($7,484.70), which leaves the actual cost for the support of the city's poor to be thirty-two thousand seven hundred eighty-four dollars and thirty-five cents ($32,784.35), a yearly cost of ninety-five dollars and eighty-six cents ($95.86), or weekly cost of one dollar and eighty-four cents ($1.84).

In conclusion, permit me to express my thanks to

officers and matrons for their earnest endeavor to promote the best interests of the institutions. Also permit me to express my sincere thanks to each member of the board for your continued confidence in me, and I trust that my efforts to discharge the responsibility resting on me may meet your approval.

Respectfully submitted,

ALBERT PINDER,

Superintendent.

REPORT OF

TEACHER AND CHAPLAIN

OF

INSTITUTIONS, CITY FARM.

1890.

TEACHER'S REPORT.

Gentlemen of the Board of Overseers: —

It is with pleasure that I present for your examination, my annual report of school-work for the year 1890.

Whole number of pupils instructed during the year	171
Pupils attending school Jan. 1, 1890	71
Males under sentence	43
Females under sentence	0
Males not under sentence	20
Females not under sentence	8
Average monthly attendance	63 2-3
Average age under sentence	12
Average age not under sentence	8 5-12
Highest number for any one month (April)	74
Lowest number for any one month (July)	53
Admitted on sentence	59
Males	56
Females	3
Discharged by expiration of sentence	48
Probation	12
Number remaining on sentence	42
Whole number attending school at present time	60
Males under sentence	41
Females under sentence	1
Males not under sentence	10
Females not under sentence	8

NAMES OF CITIES AND TOWNS THAT HAVE MADE ARRANGEMENTS WITH THE OVERSEERS OF THE POOR TO SEND JUVENILE OFFENDERS TO OUR SCHOOL.

Lowell	46
Chelsea	1

Waltham	1
Malden	4
Winchester	0
Stoneham	1
Everett	0
Medford	0
Marlboro'	1
Somerville	1
Lincoln	0
Wakefield	0
Edgeworth	0
Fitchburg	1
Clinton	0
Woburn	0
Wilmington	1
Hopedale	1
Ayer	1

COMMITTED FOR THE FOLLOWING OFFENCES.

Truancy	47
Larceny	6
Stubbornness	1
Vagrancy	5

NUMBER OF TIMES COMMITTED.

For the first time	48
For the second time	5
For the third time	4
For the fourth time	2

BIRTHPLACE OF THOSE UNDER SENTENCE.

United States	51
Ireland	2
England	1
Canada	5

Classification of the School under my supervision is as follows: —

DEVOTIONAL EXERCISES.

Morning Prayer.

IN SPELLING.

In Spelling and Defining, three classes	30
Worcester's Spelling-book, three classes	30
First class	8
Second class	10
Third class	12

IN READING.

Franklin Fifth Reader	7
Franklin Fourth Reader	11
Franklin Third Reader	12

READ IN HISTORY.

Higginson's History of the United States	6
Child's History of the United States	24

IN ARITHMETIC.

Bradbury's Eaton's Arithmetic, three classes	30
Thompson's Intellectual Arithmetic, three classes	30
In Geography, three classes	30

IN DRAWING.

One class with colored crayons	9
In Writing	30

STUDY HISTORY.

Higginson's History of the United States	6
Child's History of the United States	24
In Grammar	8

Classification of Department taught by my Assistant, Mr. M. Sexton.

IN READING.

Franklin Third Reader	13
Franklin Second Reader	7
Franklin Primer	5
Munro's Chart	9
In Geography	13

In Arithmetic..... 13
In Grammar..... 13
In Drawing..... 20
In Writing..... 20

DIVISION OF THE TWENTY-FOUR HOURS OF THE DAY.

Rise fall and winter months at..... 6 a. m.
Rise spring and summer months at..... 5 a. m.
Morning Prayer at.....6.15 a. m.
Breakfast fall and winter months at.....6.30 a. m.
Breakfast spring and summer months at.....5.30 a. m.
Recess.....
School from.....8.30 to 11.30 a. m.
Recess.....
Dinner..... 12 m.
Recess.....
School from.....1.30 to 3.30 p. m.
Recreation.....
Supper followed by recess.....
Evening prayer and hour for retiring.....7.15 p. m.

The deportment of our boys has been comparatively good, and, so far as I am able to learn, a feeling of contentment seems to pervade nearly all hearts. But one has absconded during the year. If we have been instrumental in bringing to any burdened heart one ray of joy and gladness, to God, the Father, be all glory. In closing this report I wish to express to the Board of Overseers of the Poor, and also to our Superintendent and wife, my heartfelt appreciation for their counsel and support in the trials and suffering through which I have been called upon to pass.

I am, respectfully,

WILLIAM A. LANG.

ANNUAL REPORT

OF THE

CITY DISPENSARY,

1890.

SECRETARY'S REPORT.

LOWELL, Jan. 1, 1891.

To the Board of Overseers of the Poor.

GENTLEMEN: — The Dispensary physicians would respectfully present to you their annual report for the year 1890.

The Dispensary staff appointed by the Middlesex North District Medical Society consisted of the following physicians: Drs. Colton, Willard, Ricker, Viles, Eaton, W. A. Johnson, McOwen, Gillard, and Patterson. During the year Dr. David N. Patterson, who has been connected with the Dispensary from its foundation to the present time, resigned, and Dr. Halpin was appointed.

The staff have attended to their duties, as the following tables will show: —

The whole number of patients treated at the Dispensary during the year was six hundred and thirteen (613), two hundred and twenty-five (225) males and three hundred and eighty-eight (388) females; which is forty-wo (42) less than what was treated in 1889.

The whole number of prescriptions filled and compounded was seven thousand and eighty-four (7084).

The nativity of the patients was as follows: —

Ireland	284
England	79
Massachusetts	168
Canada	18

Scotland	9
Maine	11
Vermont	1
New York	9
Pennsylvania	2
New Hampshire	9
Virginia	1
Rhode Island	1
Nova Scotia	9
New Brunswick	2
P. E. Island	2
Belgium	4
Sweden	2
Wales	2

The following table will show you the many different diseases treated and the number of cases of each: —

Abscess	7
Acne	1
Alcoholism	1
Amenorrhœa	6
Anchylosis of Elbow	1
Anæmia	1
Asthma	4
Bright's Disease	1
Bronchitis	101
Bubo	1
Burns	3
Cephalalgia	3
Chancre	2
Chancroid	1
Chlorosis	1
Constipation	19
Conjunctivitis	8
Coryza	5
Cystitis	4
Cholera Infantum	3
Debility	14
Diagnosis not made	122
Diarrhœa	21
Dog bite	1

Dysentery	1
Dyspepsia	28
Dislocations	2
Eczema	9
Epilepsy	1
Epididymitis	1
Erysipelas	3
Fracture of Clavicle	1
Furuncle	1
Fistula	1
Gonorrhœa	12
Hernia	1
Heart Disease	2
Hæmorrhoids	2
Hæmopysis	1
Intestinal Worms	4
Insomnia	1
Influenza	16
Lumbago	3
Leucorrhœa	2
Metrorrhagia	1
Morbus coxarus	1
Myalgia	2
Malaria	1
Neuralgia	11
Otitis	1
Orchitis	1
Pneumonia C. C	3
Poisoning Lead	1
Pleurisy	3
Phthisis	18
Pharyngitis	1
Pediculosis	2
Prolapsus Ani	1
Pertussis	1
Rheumatism	42
Sprain	6
Syphilis	7
Scrofula	7
Scabies	19
Teeth extracted	6

Tonsillitis	5
Tongue-tied	1
Typhoid Fever	1
Torticollis	1
Tracoma	2
Tinea	1
Tinea barbae	1
Tabes dorsalis	1
Ulcer	10
Ulcer varicose	11
Urticaria	3
Urine, Suppression of	1
Venereal warts	1
Veins varicose	4
Vertigo	2
Wounds	23

The following table will show the number of prescriptions compounded at the Dispensary from its introduction up to the present time: —

1880	3,585	prescriptions
1881	4,870	"
1882	4,027	"
1883	5,562	"
1884	5,806	"
1885	8,190	"
1886	4,486	"
1887	6,720	"
1888	7,185	"
1889	7,837	"
1890	7,084	"

During the past year the Lowell Dispensary has very kindly presented to the City Dispensary six (6) Crosby Fracture or Invalid Beds, and they have been named the "Endowment Beds;" and these beds are for the use of any citizen of the city who needs such a bed, by sending a line from his physician to the Dispensary, or to the office of the Overseers of the Poor. Since

they have been presented to the Dispensary they have been in constant use, and often they have all been in use at a time. It often happens that these beds are wanted at night as well as day, and it is often almost impossible to obtain one of them; and they should be kept at a place which is wholesome and clean, and so they can be obtained at any hour, day or night. And we would recommend your Board to provide a different place for them, and would recommend the ambulance-shed as a suitable place; we would also recommend that your Board purchase six (6) more beds, for it is very often hard to obtain one.

During the past year — and in fact for several years — there is always in the months of June, July, and August a large number of cases of cholera infantum in the city, and as the poor of the city cannot get a line for the ward physician after three o'clock on Saturday until nine o'clock Monday morning we would recommend to your Board that you employ one of the Dispensary staff to be at the Dispensary Sunday mornings during those months, and a certain per cent. of the mortality among children under five years of age will be averted and a certain number of children saved, and we think it should be done in this city as well as it has been done in other cities.

We would extend to you our thanks, and also to the clerk of the Dispensary, for the many favors you have shown us.

Respectfully submitted,

CHAS. H. RICKER,

Secretary.

ANNUAL REPORT

OF THE

Births, Marriages and Deaths

OF THE

CITY OF LOWELL

FOR THE YEAR 1890.



LOWELL, MASS.:
Morning Mail Print, 147 Central Street,
1891.

CITY OF LOWELL.

In Board of Aldermen, March 19, 1891.

Received and ordered on file, sent down for concurrence.

MICHAEL J. DOWD,

City Clerk.

In Common Council, April 14, 1891.

Received and ordered on file, in concurrence.

DAVID CHASE,

Clerk.

REPORT OF THE CITY CLERK.

CITY OF LOWELL,
CITY CLERK'S OFFICE, March 17, 1891.

To the City Council:

GENTLEMEN — I have the honor to present the Annual Report of Births, Marriages and Deaths for the City of Lowell, for the year 1890.

BIRTHS.

The total number of births returned and recorded for the year 1890 was 2,175; males, 1,107; females, 1,068; an increase over the number returned and recorded in 1889 of 42, of which increase 34 were males, and 8 females. Of the entire number returned and recorded 116 were born elsewhere than in Lowell, but were found by our enumerators and returned and recorded according to law. There were also returned the names of 13 children who were born of Lowell parents, residing temporarily out of the city.

Number of Births, Parentage, etc., by Wards.

WARDS.	One.	Two.	Three.	Four.	Five.	Six.	Total.
Whole No.	307	238	445	292	643	250	2175
Males	158	119	237	143	322	128	1107
Females	149	119	208	149	321	122	1068
Born of American parents	29	38	85	84	69	57	362
Born of Foreign parents	221	149	251	150	491	157	1419
Born of American father and Foreign mother	35	22	43	25	49	16	190
Born of Foreign father and American mother	21	23	50	29	27	13	163
Nationality of parents unknown	1	6	16	4	7	7	41
Twins	4	3	5	2	11	2	27
Illegitimate	....	..	10	5	5	2	22

MARRIAGES.

Nine hundred and eighty-three intentions of marriage were recorded, and certificates issued in 1890, an increase of twenty-two over 1889.

The total number of marriages returned and recorded for the the year 1890, was nine hundred and seventy-nine, an increase of fourteen over 1889. Of this number, nine hundred and thirty-five were solemnized in Lowell, and forty-four elsewhere.

Total number of marriages in each month in 1890:

January,	62	May,	74	September,	93
February.	100	June,	101	October,	110
March,	28	July,	69	November,	114
April,	102	August,	70	December,	56

Oldest person married, 77; youngest person married, 16; oldest couple married, 77–60; youngest couple married, 17–17.

Nationality of Contracting Parties:

	Grooms.	Brides.
United States	437	426
Canada	216	215
Ireland	141	161
England	91	69
British Provinces	46	65
Scotland	19	24
Sweden	14	11
Other countries	16	7

DEATHS.

The total number of deaths recorded in 1890 was 1,960, an increase of 66 over 1889.

Total number of males, 908.

Total number of females, 1,052.

In the reports of the City Physician and Superintendent of Burials may be found all other desired information regarding cause of death, percentage of mortality, etc.

Copies of the record of births, marriages and deaths, have been forwarded to the Secretary of the Commonwealth, as required by law.

Respectfully submitted,

MICHAEL J. DOWD,

City Clerk.

Table giving the Population and number of Births, Marriages and Deaths recorded in Lowell since its incorporation.

	Population.	Births.	Marriages.	Deaths.
1826–1843	.....	est. 5,010	est. 4,500	4,186
1844	25,163	662	319	362
1845	.....	660	319	363
1846	29,127	772	291	690
1847	.....	719	659	949
1848	.....	796	516	825
1849	.....	672	320	903
1850	33,383	966	674	492
1851	.....	1,018	669	629
1852	.....	1,007	669	604
1853	.....	1,093	742	734
1854	.....	1,092	808	834
1855	37,554	1,039	687	766
1856	.....	1,034	632	790
1857	.....	1,051	585	818
1858	.....	827	467	626
1859	.....	983	496	739
1860	36,827	1,077	497	720
1861	.....	949	459	713
1862	.....	763	368	641
1863	.....	657	302	695
1864	.....	658	335	633
1865	30,990	672	406	575
1866	36.878	813	625	749
1867	.....	826	596	640
1868	.....	860	495	857
1869	.....	858	575	763
1870	40,928	926	515	952
1871	.....	886	647	1,033
1872	.....	1,099	670	1,048
1873	.....	1,365	705	1,161
1874	.....	1,356	580	1,184
1875	49,688	1,296	513	1,020
1876	.....	1,264	514	1,147
1877	.....	1,341	552	1,029
1878	.....	1,332	546	1,088
1879	.....	1,412	635	1,006
1880	59,485	1,770	744	1,312
1881	.....	1,840	786	1,287
1882	.....	1,755	813	1,322
1883	.....	1,681	848	1,432
1884	.....	1,786	735	1,401
1885	64,051	1,769	707	1,328
1886	.....	1,813	813	1,499
1887	.....	1,835	873	1,872
1888	.....	1,866	886	1,763
1889	.....	2,133	965	1,894
1890	77,696	2,175	979	1,960

ANNUAL REPORT

OF THE

SUPERINTENDENT OF BURIALS

FOR THE

CITY OF LOWELL,

FOR THE YEAR 1890.

LOWELL, MASS.
CITIZEN NEWSPAPER COMPANY, PRINTERS.
1891.

In Board of Aldermen, Jan. 15, 1891.

Read and ordered on File.

Sent down for concurrence.

MICHAEL J. DOWD, *City Clerk.*

In Common Council, Jan. 20, 1891.

Read and ordered on file, in concurrence.

DAVID CHASE, *Clerk.*

LOWELL, December 31, 1890.

To the Honorable, the City Council of the City of Lowell:

GENTLEMEN—I herein submit the annual report of the Superintendent of Burials for the year ending December 31, 1890.

The report contains the number of remains transferred from one lot or grave to another lot or grave, and the number of remains brought from other Cities or Towns, also the amount of money received and paid to City Treasurer, for the sale of single graves.

The names of deceased persons, where removed to, and where removed from, can be found on file at the City Clerk's office.

Number of remains removed from one lot or grave to another, 9.

Number of remains brought from other cities or towns, 98.

Amount of money received for sale of single graves, $130.00.

Respectfully yours,

F. A. BATES,
Supt. of Burials.

ANNUAL REPORT

OF THE

BOARD OF HEALTH

FOR THE

CITY OF LOWELL,

FOR THE YEAR 1890.



LOWELL, MASS.:
HARRINGTON BROS. PRINTERS.
1891.

CITY OF LOWELL.

In Board of Aldermen, February 10, 1891.

Received and ordered on file; sent down.

MICHAEL J. DOWD, *City Clerk.*

In Common Council, February 10, 1891.

Read and ordered on file in concurrence.

DAVID CHASE, *Clerk.*

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BOARD OF HEALTH.

1890.

James B. Field, M. D. *Chairman.*

Charles R. Costello, *Secretary.*

J. Arthur Gage, M. D. *City Physician.*

HEALTH DEPARTMENT OFFICERS.

Frederick A. Bates, *Agent and Superintendent.*

John F. Hall, *Foreman.*

Stephen Garrity,
Joseph Mack,
Charles A. Hamblett, } *Inspectors.*

Samuel Hanson, *Inspector of Milk, Vinegar and Provisions.*

REPORT.

OFFICE OF THE BOARD OF HEALTH,
LOWELL, January 31, 1891.

To the Honorable City Council:

The Board of Health herewith submits its thirteenth annual report, covering the year 1890.

MEMBERSHIP AND ORGANIZATION.

Owing to the re-appointment of James B. Field, M. D., there has been no change in the membership of the Board. The other members are Charles R. Costello, and the City Physician, J. Arthur Gage, M. D., who is a member by virtue of his office. This Board is the First Board of Health of our City in which there has been no change of membership for three successive years.

As required by law, the Board met for organization on the first Monday in February. The organization of 1888 and 1889 was continued by again choosing Dr. Field as Chairman, and Mr. Costello as Secretary. Frederick A. Bates was reappointed agent and superintendent of the Health Department.

MEETINGS.

The regular meetings of the Board have been held on Tuesdays at 4 P. M. During the year forty-five office meetings have been held and three visits of inspection have been made by the entire Board. In addition each member of the Board

has made several individual visits to inspect nuisances and has often accompanied the superintendent and inspectors upon their rounds.

GROWTH OF THE DEPARTMENT.

According to the last census the population of the city is increasing at the rate of twenty-seven hundred per annum. This yearly increase in population calls for an increase in every line of sanitary work. It means an increase in the number of dwelling-houses and stores, in all of which the plumbing must be inspected, and from which the ashes and garbage must be removed. An annual addition of twenty-seven hundred people to our city means an increase in the number of cases of contagious disease, not only from the numerical increase in the population, but also from the increased density of population which affords better facilities for the transmission of disease. An increase of population certainly causes a much greater rate of increase in sanitary work. From executive officers, from clerks, inspectors and gatherers of refuse, an increased amount of work is required. The Health Department has been able to meet the requirements of this work with a force of thirty-five or thirty-six employees, an increase of two or three men over last year. One new man was employed as inspector of plumbing. Upon the teams there was one additional man, or two men, if occasion required.

DEPARTMENT STABLE.

Last year's report called attention to the fact that the stable accommodations were far from satisfactory. No other department of the city is as poorly equipped with stable facilities as is the Health Department. Every week day in the year with the exception of the Fourth of July and Christ-

mas, the horses are at work drawing ash-teams and swill-teams. The work is laborious and has to be performed daily regardless of the weather. For this work none but first-class horses can be used, and they should receive first-class stable accommodations. The stable is an old wooden structure, with a poor cellar, a small loft, and no means of ventilation for the fourteen horses housed therein. There is no room for an increased number of horses unless use is made of the two box-stalls which are frequently required for sick horses. There is insufficient shed room for all the carts and sleds, some of which have to stand outside exposed to the action of the weather. Such a condition of affairs is not true economy.

NUISANCES.

The following list comprises the annual report of the inspectors, concerning the number and character of the nuisances found and abated during the year 1890, the number of plumbing jobs inspected, the number of complaints investigated, visits to houses containing contagious diseases, legal notices served, and other statistics showing the amount of work performed during the year:

Privy vaults full and owners notified to remove contents	586
Privy vaults full, second notice	24
Privy vaults removed and discontinued	145
Privy vaults leaking and out of repair	15
Privy vaults uncovered	20
Privies filthy	30
Total vault nuisances abated	820
Water closets foul and offensive	74
Water closets without sufficient water supply	95
Water closets out of repair	5
Sinks not trapped	492
Waste pipes of improper material	56
Open joints in waste pipes	89

Open joints in sewer pipes in cellar	3
Sink drainage on surface of ground	18
Defective drainage	26
Total nuisances of house drainage abated	858
Filthy yards and alleys	109
Filthy cellars	15
Filthy tenements	4
Filthy barns	2
Filthy sheds	8
Swine on premises	11
Hens in cellar of dwelling-house	3
Dead animals removed	1550
Glandered horses killed	11
Houses vacated, number of tenements	9
Houses disinfected after contagious disease	381
Total	2103

SUMMARY OF NUISANCES ABATED.

Total nuisances abated, vaults	820
Total nuisances abated, house drainage	858
Total nuisances abated, miscellaneous	2103
Grand total nuisances abated	3781

MISCELLANEOUS STATISTICS.

Privy vaults, permits issued to clean	1148
Privy vaults, cleaning superintended by inspector	45
Privy vaults, connected with sewer, visits to see whether properly flushed and cared for	94
Privy vaults measured	6
Plumbing jobs inspected and approved	376
Plumbing jobs visited more than once	674
Complaints received and investigated	422
Number of these complaints where no cause existed	38
Second visit to premises to see if nusiances had been abated	413
Warning notices sent to persons to abate nuisances	43
Visits made to houses containing contagious disease, and instructions given to family	1095
Visits to premises of persons who collect swill	50
Number of legal notices served to abate nuisances	149
Number of legal notices served to vacate tenements	9
Number of free vaccinations	374

ASHES.

The collection of ashes and house dirt as performed by the Health Department continues to give satisfaction. If this work were let out to a contractor it would for economical reasons probably be slovenly done, whereas with the work under control of the Board of Health, its proper performance is the first consideration. Householders must remember that the department does not remove the waste materials left by the carpenter and mason in building. All that the city takes is the ashes and ordinary house dirt. This material so collected is used for grading and filling low land. To such a use of ashes no objection can be made, provided they do not contain garbage, and most of the loads are free from garbage. When a load of ashes is mixed with swill it should never be placed on a dump. Its proper disposal will be spoken of under the head of garbage. During the year, eighteen thousand one hundred and fifty loads of ashes and house dirt were removed. In 1889 there were seventeen thousand nine hundred loads; in 1888, seventeen thousand and ninety-one loads, and in 1887, sixteen thousand two hundred and seventy-five loads. The foregoing figures give no idea as to the actual increase of this line of work from year to year. It is not the number of loads of ashes but the place from which they are taken and the place in which they are dumped that determines the amount of work. It is much easier to collect several loads of ashes in the centre of the city, than it is to collect half a load in the Tewksbury annex or Middlesex Village. As mentioned in last year's report, the collection of ashes from the outskirts of the city has been done with more regularity and thoroughness than formerly. As from year to year the depart-

ment is forbidden to dump ashes in central localities, dumping grounds have to be sought in out-of-the-way and inconvenient places, necessitating long hauls. Thus it is seen that the work done in collecting ashes does not depend upon the number of loads, and that argument as to the small increase of work done in this department is intentionally misleading if based upon the number of loads collected. The duties of a collector of ashes are at all times arduous and especially so at the present season of the year.

A work which properly belongs to the Street Department is the cleaning of alleys. In certain alleys the refuse deposited there by adjacent tenants is decidedly offensive. The Health Department for many years has looked after the alleys and they have never been kept in a cleaner condition than in 1890.

GARBAGE.

The views of the Board of Health upon this subject are essentially the same as in the two previous years, and can be expressed best by giving a brief resume of last year's report on the subject:

"The Board of Health believes that there is only one suitable method by which to dispose of all the animal and vegetable waste of a city, with the exception of human excrement. All refuse and waste of food materials should be gathered from the households and markets at frequent intervals. It should be removed in receptacles as nearly air tight as possible, and conveyed to some locality on the outskirts of the city. Here the swill and other garbage should be consumed by fire. The whole process, from the collection of the garbage

to its destruction, should be performed solely by the Health Department of the city."

Former reports of this Board have explained in detail how the swill of this city was disposed of to farmers as a food for hogs. The farmers are required to furnish tightly covered receptacles for the swill, and agree to allow the department inspectors to have access to their premises at all times. If it is found that cows are fed upon swill, their owner is no longer allowed to obtain swill in this city, and is prosecuted for violation of the law of 1889 prohibiting the use of garbage as a food for cows.

It is unnecessary to dwell at length upon the evil effect of a swill diet upon a cow's secretion of milk. Neither is it necessary to do more than call to mind the investigations of the State Board of Health, showing that hogs fed upon city swill frequently become trichinous. Both of these topics were treated at length in the annual report of 1889. From that report and from the daily press, the public have become justly convinced that swill is not a proper food for cows, nor even for swine. How then can it be disposed of? This same question is to be asked with reference to the refuse from fruit stores and markets. In these places there is in the summer, a large amount of decaying vegetable matter which even hogs will refuse to eat and which the store-keepers have to dispose of as best they can. Their usual procedure is to go at about dark with a load of rotten apples, and dump them at some place where the Health Department teams dump the ashes. The dealers are not to be blamed for this, for there is no other way to get rid of their refuse.

The dump, however, is not a suitable receptacle for organic

matter undergoing fermentation. The odors arising from such a dump are by no means agreeable to the neighborhood. Sooner or later cellars are dug in this mixture of ashes and garbage. To allow a house to be built on such a soil is wrong. It is evident the refuse vegetable matter from stores needs to be disposed of in some new way, just as much as the swill from private houses.

To bury our swill and other garbage is not practicable. Decomposition goes on so slowly that a large acreage would be needed. Not enough land could be obtained near the city; land so used would be unsuitable for building purposes, and, altogether, such a method would be costly and inefficient.

If each family would burn its own table refuse, the city would be saved the constantly increasing expenses of garbage collection. For many reasons, however, this plan would be difficult of universal adoption.

The only solution of the problem is to destroy our garbage by cremation or by extracting its grease. Cremation of garbage has long been practised abroad, and in the past few years has made rapid strides in the southern and western portions of our own country. In the south the fear of yellow fever is worth a good deal from a sanitary point of view. There the cities burn all sorts of refuse. Swill, night soil, and dead animals are all consumed successfully.

In last year's report considerable space was devoted to the Merz process of extracting grease from garbage by means of benzine and other agents. At first thought, this process of extracting the useful constituents of garbage appeals to us from an economical point of view. As a matter of fact, however, the process would not be economical for a city the size

of Lowell. The first cost of the plant is such that the method cannot be used successfully in small cities. Furthermore, garbage mixed with ashes cannot be treated in this way, nor can infected bedding be thus destroyed. The profits from the extraction of grease do not accrue to the city, but to the Merz Company, which does not sell its plant outright. A few cities which started with this method have already abandoned it.

From the above considerations, the Board of Health sought for some plan of garbage destruction more suitable for this city. The testimony of other cities was strongly in favor of cremation. Garbage can be burned in almost any pattern of furnace, which will withstand the intense heat that is required. The odor of the burning matter is, as one might expect, quite offensive, and must be done away with, if a city wishes to have its furnace near enough to built-up localities to save long hauls by the teams. To destroy the odor of combustion, the gases themselves must be consumed by a secondary fire.

This double fire is a peculiarity of the Engle furnace. Here the swill teams drive into a shed on a level with the top of the furnace and dump the garbage through manholes on to a grate beneath. At both ends of the garbage there is a fire, and underneath the garbage grate is a pan to catch the liquid residue. By an ingenious system of dampers either fire can be made to pass forward or backward, above or beneath the garbage grate. In no case does the flame escape up the chimney until it has passed through the second fire which thoroughly destroys the odor. After the cremation is once well under way, the gases formed are so hot that in themselves they are an aid to further combustion. There are

now about twenty-five Engle furnaces in operation from New York in the north to Panama in the south. These furnaces can be used to destroy all sorts of material. The New York furnace is used by the Board of Health mostly for the destruction of infected bedding, furniture and clothing. In the south, night soil and dead animals are burned in addition to garbage. The testimony of health officers in cities using this furnace shows that it invariably gives satisfaction.

The Board of Health had proceeded thus far with its investigation when a petition was received, asking for a hearing upon the nuisance caused by the Aiken street dump and the swill-house. At this hearing property-owners testified as to the disagreeable odors arising from this locality. Gentlemen who travelled daily on the River street electric cars gave similar testimony. The owner of the large tenement block spoke of the nuisance caused by the swarms of flies collecting in the neighborhood, saying that he had been obliged to screen every door and window in his block. Corroborative testimony was given by others. The petitioners were urgent in their demands for relief.

The Board of Health felt that to stop dumping in the locality and to remove the swill-house elsewhere would be simply to remove a source of offense to another locality. It was decided to make a personal inspection of the garbage furnace at Gravesend, Long Island. Here the Board found an Engle furnace destroying the table refuse of the average summer resort. The smoke issuing from the chimney was almost colorless and was without odor. The cost of a furnace of this pattern, suitable for Lowell, was about $6,000. To run it about one and a half tons of coal per day would be

required. This cost of fuel would be partially offset by the sale of the ashes of the garbage, which are of value as fertilizers. To manage the furnace two men would be required. This would entail no extra expense, for a furnace would do away with the need for men now employed at the swill-house and on the dump.

In the fall the Board of Health called the attention of the City Council to the condition of the dumps and to the complaints that had been made. A committee of the city government was appointed. This committee visited the dumps and swill-house and heard evidence on the subject. The individual members of the committee expressed the opinion that this state of affairs ought to be remedied. Owing to financial reasons and the fact that the year was drawing to a close, nothing was done. The responsibility for the condition of the dumps rests therefore with the City Council, and not with the Board of Health.

Some relief ought to be obtained before another summer, despite the fact that some of our citizens believe it is perfectly proper to feed decaying swill to cows and pigs, or to dump it on the ground.

	1888.	1889.	1890.
Barrels of swill sold	11,296	10,756	12 552
Barrels of swill destroyed unfit for use . . .	675	1,400	800
Total number of barrels collected	11,971	12,156	13,352

In addition to the amount thus collected probably as much more swill was gathered from the hotels and corporation boarding houses by the licensed collectors. From the sale of swill $3,138 was received in 1890. In 1885, $3,711.41 was received from the sale of swill. At that time, swill could be fed to cows and was sold at thirty cents a barrel, none of it was

destroyed. If similar conditions were present now over $4,000 would be realized from the sale of swill. Such a source of revenue does more harm than good.

VAULT CLEANING.

As in former years, privy vaults have been cleaned by a process much used in our own city and other places. This is the well known odorless excavator process, where the liquid contents of a vault are pumped into a tank, and the solids are dipped into tightly closed barrels.

Notwithstanding statements to the contrary, the process is an improvement on the night cart system. Then the work was done under cover of the dark, and done carelessly with leakage of filth. As long as the odors did not arouse the sleeping citizen, he was none the wiser. The odorless process is on the contrary carried on in the day time when the watchful eyes of inspectors and of citizens lessen the temptation to carelessness. Unfortunately, however, the public gets the benefit of whatever smell there is. The term "odorless" is a misnomer. On a muggy day or in the crowded localities, vault cleaning will always be offensive even with the best apparatus, with skilled workmen and with abundance of disinfectants, the process will at times be a nuisance. The only remedy is to do away with privy vaults as far as possible.

The business of cleaning vaults by the odorless excavator process has been carried on during 1890 by Fred A. Fox and William P. Foye.

There have been a few changes made in the regulations for vault cleaning. The "odorless district" has been abolished, and now all vaults within the city must be cleansed by the odorless process unless permission to cleanse otherwise has

been obtained from the Board of Health. The object of this change was to include all privy vaults in this requirement, reserving the right to make exception for isolated houses on the outskirts, where vault cleansing would not be offensive to the neighbors.

Another change in the rules required the entire removal of the contents of the vault every time it is cleaned. Heretofore a householder could have a load of fæcal matter removed from time to time, perhaps without disturbing the contents of the bottom of his vault for several years, unless the Board of Health ordered the vault cleansed when it had to be cleaned to the bottom. Now, the entire contents of the vault are removed each time it is cleansed. Under the former method a vault once receiving fæcal matter containing disease germs, might always thereafter contain these germs. Now, with complete removal of the material, there is a chance for disinfection to accomplish something.

A change has also been made in the price of vault cleaning. Formerly the licensee charged three dollars for a tank load of sixty cubic feet, but in reality his tanks contained more than sixty cubic feet. On the other hand, the charge for solid material was three dollars for twelve barrels, when it took nearer fifteen barrels to make sixty cubic feet. Thus the charge for pumping the liquid was lower in proportion than the charge for shoveling the solid matter. Fearing that for this reason the licensee would be liable to remove some material by shoveling that could be taken away by the more sanitary method of pumping, the price was changed. Now a charge of twenty cents a barrel is allowed, and five cents per cubic foot can be charged for a tank load, even if the tank contains over sixty cubic feet.

	1888.	1889.	1890.
Number of loads of vault filth removed . . .	3,683⅜	1,659	1,705⅛

REMOVAL OF VAULTS.

"Where a house is situated on the outskirts of the city, remote from other dwellings, its inmates can without danger make use of a privy vault if it is not too near the house, is frequently cleaned, and is tightly constructed so as not to contaminate any well by leakage of its filth. When in process of time the growth of the city hems in this house closely by other dwellings and tenement blocks, the same vault becomes a nuisance. It becomes leaky with age, its contents contaminate the surrounding air, and above all it is especially a nuisance when it is being cleaned. A privy vault in the built-up portions of a city is a relic of a by-gone age. Although it may be a sign of a city's rapid growth, it shows a lack of sewer facilities and an inadequate support of the Health Department, in times past. When all vaults are removed from the thickly settled portions of the city, it will be far better for the health of the people, and will dispose of a very troublesome and vexatious problem." (Extract from report of 1889.)

Acting upon the above belief the Board of Health of 1888 began the routine work of vault removal throughout the city. In that year two hundred and fifty-four vaults were removed; and in 1889 one hundred and seventy-seven vaults were removed; and in 1890 one hundred and forty-five vaults. This yearly decrease in the number of vaults removed does not imply a lessened belief in the efficacy of the measure, but rather a lack of sewer facilities. A few streets upon which vaults were ordered out, were found not to possess as good

sewers as the Board was led to believe existed. Consequently some of the orders to remove vaults were necessarily suspended for the present.

During the three years 1888, 1889, 1890, that the present Board of Health has been in office, five hundred and seventy-six vaults have been removed, about seven times as many as were removed in the years 1885, 1886 and 1887. That this was not by any means a "wholesale" or unnecessary removal of vaults, will be seen by reference to the table given below. Early in 1890 a book was prepared giving the conditions of each privy vault in the city. Among the facts recorded were the name of the owner or agent, the street and number, the number of privies by which the vault was covered, the number of stories to the privies, the number of families using the vault, its distance from the nearest house, whether it was tight or leaky, and the material of which it was composed. Space was also left to record any action that might be taken with ragard to the vault. From the records of this vault book it appears that at the beginning of 1890, there were two thousand eight hundred and seventy–eight vaults or substitutes therefor, as shown by the following tables:

PRIVY VAULTS IN LOWELL. SPRING OF 1890.

Vaults constructed of wood	1270
Vaults constructed of brick	992
Vaults constructed of stone	430
Top of ground or a hole used as a vault	56
Barn cellar used as a vault	130
Total vaults	2878

Of these vaults one hundred and forty-five were removed by orders of the Board. Surely a discontinuance of five per cent. of the vaults is not wholesale removal. Two hundred and thirty-six of the two thousand eight hundred and seventy-eight

vaults were leaky. The city ordinances require that a vault shall be made of brick, tightly cemented. Only nine hundred and ninety-two of two thousand eight hundred and seventy-eight vaults were constructed of brick and in many of these the cement was poor. While a vault constructed of stone might be tight, it is certain that a wooden vault will give out and leak in course of time. The number of leaky vaults recorded above represents only the visible leaks. When it is considered that sixty-five per cent. of the privy vaults are improperly constructed, and that the Board has discontinued only five per cent. it is evident that the Board has failed in its duty, and although it has been more active than former boards in the removal of vaults, that still it has not been active enough.

LOCATION OF PRIVY VAULTS.

	Vaults at beginning of the year.	Removed by Board during the year.
Ward One	167	14
Ward Two	509	23
Ward Three	968	4
Ward Four	386	10
Ward Five	507	21
Ward Six	341	73
Total	2878	145

At the beginning of the year 1890 there were connected with the several corporation boarding houses and tenements one hundred and fifteen vaults of which thirty-seven have been removed in compliance with orders of the Board of Health.

Of the seventy-eight vaults remaining upon the corporations some are connected with blocks which are already being converted into manufacturing purposes. The sanitary accommodations of the corporation houses are far better than when the work of vault removal was begun three years ago. Some of

the best and most thorough plumbing work in the city may be seen on one of our corporations.

SEWERS.

It seems almost useless to again call the attention of the city government to our inadequate sewer facilities.

As mentioned in previous reports there are some sewers but a short distance below the ground and of no use to the buildings which they are supposed to serve. Others are so old that but little information can be obtained concerning them from the excellent records in the City Engineer's office. Still others are pieced out by private drains. Many thickly settled parts of the city have no sewers at all, and saturate the ground with the refuse from kitchen sinks, and water closets. This state of affairs is partly due to the piece-meal way in which the sewers are constructed. Our sewers are in charge of a committee of the Board of Aldermen. No matter how intelligent and capable such a committee may be, nor how carefully they may plan for the extension and improvement of our sewer system, their efforts may be entirely upset by the appointment of a new and inexperienced committee the next year. We have a Water Board zealous to protect our supply from pollution, and fully informed upon this important subject. To have such a board entirely changed in a year would be folly. Nevertheless, the sewer committee is liable to change every year. The extension of sewers should keep up with the extension of water mains. A well sewered city means a low death rate. Water Department, Public Library, Assessment of Taxes, Schools, and Health Department are all governed by boards which do not change their entire personnel every year.

Why should not the sewer committee have some degree of permanency?

Again the Board of Health asks for more sewers. Statistics show a well sewered city is far healthier than one poorly sewered. It may seem to some an important question as to whether sewers are constructed by contract or by the city. It is not, however, as vital a question as the one whether sewers are to be constructed at all.

From time to time suggestions with regard to sewer ventilation have been made by theoretical sanitarians and by practical business men and mechanics, and have been recommended in the earlier reports of the Board. It has been proposed to build at the highest point of a line of sewers, a chimney through which sewer gas might escape. Such a chimney constructed partly of brick and partly of iron, could be erected at small expense. A small gas flame burning in the chimney would insure a constant upward draft. Theoretically such a plan would relieve the sewers and poorly plumbed houses of much sewer gas. The Board recommends that the sewer committee make an experimental test of this method.

HOUSE DRAINAGE.

For a few years past the Board of Health has had a satisfactory set of rules for house drainage. These rules were enforced only by an ocular inspection of the plumber's work. In the last annual report the criticism was made that plumbers were not required to submit plans of their work to the Board of Health, and the inspection of plumbing did not test for leakage. Previous to the present year the Board in certain cases, allowed the use of cement drain-pipe in cellars.

All of these weak spots in our regulations have been done away with.

Below are the most important changes that have been made in the plumbing regulations this past year:

HOUSE DRAINAGE AND PLUMBING.

Rule 1. No person shall carry on the business of plumbing, unless he shall have first registered his name and place of business in the office of the Board of Health, and notice of any change in the place of business of a registered plumber shall be immediately given to the agent of the Board of Health.

Rule 2. Every plumber shall, except in case of repairs of leaks, file at the office of the Board of Health, an application with suitable drawings and descriptions of the plumbing and drainage of every building wherein he is to do work. Blanks will be provided at the office of the Board for that purpose.

The plumbing and drainage shall be executed according to the plan approved by the Board of Health, and no part of the work shall be covered or concealed until after it has been examined by an inspector of the Board of Health; and notice must be sent to the office of the Board of Health from time to time, as soon as the work is sufficiently advanced for such inspection.

Rule 3. The house drain from a point five feet outside the cellar wall must be of *extra heavy* cast iron pipe, and all to be free from holes and cracks and *not tar coated.* All fittings used in connection with such pipe must correspond with it in weight and quality.

Rule 10. Before the plumbing work is used the same shall be tested by the water test, in the presence of the inspector,

by filling the soil pipe with water to a height above the highest fixture. All defective pipes discovered must be removed and replaced by sound pipes and all defective joints made tight.

All joints in iron drain pipes, soil and waste pipes, must be filled with oakum and lead, and hand caulked so as to make them gas tight.

Very little trouble was experienced in getting plumbers to submit plans of their proposed work, or comply with the new regulations in every way.

A requisition was made upon the Civil Service examiners for a list of pratical plumbers who were qualified to assume the position of inspector of plumbing. From the names certified to the Board of Health, Mr. Stephen Garrity was appointed inspector of plumbing. Under his oversight all new plumbing work was done, and as has been stated, the ocular inspection of former years was supplemented by a test for leakage. For this purpose the lower end of the soil-pipe and all branches were tightly plugged, and the soil-pipe was filled with water. This was, of course, a rigorous test, but it is well to have a test more severe than would occur in actual practice. This water test reveals all imperfections in the pipe and all poorly caulked joints.

When the test was first applied many joints were found which would not pass muster.

The Board of Health now feels well satisfied with its plumbing regulations and has an assurance that the poor man in any tenement hereafter plumbed, will be as free from the danger of sewer gas as are the residents of our more costly homes.

The only criticism to make is that any man without preliminary training is allowed to put out a sign calling himself

a plumber and giving people to understand that he is qualified for a calling which may affect the health of the community.

During the year three hundred and seventy-six plumbing jobs were tested and approved. To perform the tests properly much time is required. In addition to the initial visit made to each job, there were six hundred and seventy-four additional visits made in cases where the first test was not satisfactory.

TENEMENT HOUSES.

The urgent need for suitable building laws has been spoken of in former reports. Where land is valuable, the owner wishes to utilize it all, in erecting his tenement house. In narrow lots this often leads to the construction of buildings insufficiently supplied with sunlight and fresh air. These gifts of heaven are essential for well persons, and are important factors in promoting recovery in case of illness, and in preventing the spread of contagion. Lowell ought to follow the example of other cities in enacting suitable building laws and providing for an inspector of buildings. The health of the poor man is as important to the community as is the state of the real estate owner's pocket book. The Board of Health has repeatedly called attention to this matter of the erection of unsanitary dwellings.

The responsibility in the matter, therefore, lies in the hands of our City Councils.

BATH HOUSE.

The public bath house is now in the second year of its existence, and if the figures of attendance can be taken as a criterion, it has certainly demonstrated its usefulness.

The bath house was opened July 1st and closed October 1st. The number of persons that availed themselves of its privileges was twenty thousand one hundred and twenty-three. The largest daily attendance was six hundred and forty-two on August 2nd. The average attendance was about two hundred and twenty a day. Thursdays was set apart for women. The largest number of women bathers was one hundred and fifty-five on August 14th. During the last fortnight that the house was open, there were several cold and damp days upon which there were no bathers.

The location of the bath house is not satisfactory. The most accessible place is Central Bridge, but here the river is highly contaminated with sewage. As one goes up stream this contamination lessens, and at the point where the house is located, above the Aiken Street bridge on the right bank, there is less admixture with sewage, but nevertheless there is too much of this material for an ideal bathing place. The best water is to be found above the dam, and here we meet with another difficulty. There is no suitable place for the bath house on the right bank, and the left bank is too far off to accommodate a large number of patrons.

The cost of running the bath house, including putting it in the water, and removing it again at the close of the season, was $685.75.

INSPECTION OF MILK AND PROVISIONS.

The plan of having the inspection of milk and provisions under the control of the Board of Health still continues to work satisfactorily. The inspection of provisions has been carried out faithfully. The markets have been visited at least once a week. In warm weather two and three visits a week

have been made, and even more than this when decaying fruit was exposed for sale. During the holiday season the provision stores were inspected daily. As a result of these inspections our markets have been kept in an excellent condition. The fact that tainted meat and vegetables are seized and destroyed does not deter the storekeeper from again exposing such articles for sale. As long as the law reads that a dealer is liable only when he knows his meat to be unwholesome, so long will convictions be impossible. The word "knowingly" should be stricken out of the statutes. For the health of the people, dealers should be bound to know whether their meat and vegetables were wholesome or unwholesome.

Below are given a few statistics regarding the inspection of milk. For details the annual report of the inspector should be consulted.

1890	Number of samples of milk tested.	Average per cent. of milk solids in samples collected.
January	45	13.06
February	213	12.96
March	182	12.92
April	144	12.81
May	84	12.33
June	16	12.66
July	120	12.76
August	66	13.04
September	96	13.05
October	77	13.01
November	54	13.14
December	18	13.09
	1,115	

Remembering that the legal per cent. of milk solids is twelve for May and June, and thirteen for the rest of the year it will be seen that except in four months the milk was above the standard and at no time was it far below the

requirements. The inspector successfully prosecuted eleven dealers whose milk was far from what it should be.

While it is important to prevent the dilution of milk with water and far more important to prevent its adulteration with other substances, yet these measures are not all that should be taken with regard to the milk supply. Boards of Health should have the power to visit dairies, to see that the cows are housed in a dry and cleanly place and supplied with pure drinking water. The animals should be inspected for traces of disease. It is now evident that a consumptive cow can transmit tubercuIosis through her milk. All such cows should be killed and their flesh destroyed as unfit for use. Scarlet fever and other diseases also may be transmitted by milk. The disease germ is by far the most dangerous adulterant of milk. The one remedy for it is inspection of the dairies by an expert veterinarian.

CONTAGIOUS DISEASES.

Although the public is conversant with the methods of proedure of the Board of Health in cases of contagious disease, it may be well to mention the usual course of handling these cases and to point out the defects in the present system.

The essential points in the management of diseases of this nature are notification, registration, abatement of unsanitary conditions, isolation, disinfection.

Notification of the existence of small-pox, diphtheria, scarlet fever, and other diseases dangerous to public health is made obligatory to physicians and householders by statute law. Experience compels the Board of Health to insert in its regulations the statement that varioloid, membranous croup, measles and typhoid fever are diseases dangerous to public health with-

in the meaning of the statute and as such must therefore be reported. With the exception of typhoid fever, but few cases of carelessness in reporting contagious diseases have been observed among physicians, and in no case has there been found a willful attempt to conceal the existence of a contagious disease. Such an act would indeed be criminal, for it might lead to the spread of an epidemic involving the loss of many lives. In cases where the milder forms of contagious disease are treated without the aid of a physician, the parents through ignorance of the law or desire to keep their well children at school often fail to notify the Board of Health.

Registration of all the facts relative to a case of contagious disease, is necessary for the proper investigation of the disease. The information gathered by the inspector and registered included the name, age, and residence of the patient, the probable source of contagion, the sanitary condition of the premises, the milk supply, the water supply, and the public schools attended by children of the family.

The abatement of unsanitary conditions refers to all cases of defective plumbing and drainage, filthy privy-vaults and other unhygienic arrangements on the premises.

Isolation is the next step in the treatment of contagious disease and if properly carried out, is a most important measure in preventing the spread of contagion. The only satisfactory method of isolation is that employed in small-pox, where the patient is immediately removed to a special hospital and kept there until all danger of transmitting the disease is past. In cases of diphtheria, scarlet fever and measles, the Board of Health has unfortunately to depend in nearly every instance on isolation in the home. The first step in this isolation is placarding the house with cards bearing the name of

the disease. All public school-books and public library books are removed from the house. All school children are required to stay at home, and not to play with other children. The patient is, as far as possible, to be nursed only by one person, and when possible kept isolated in a room apart from the rest of the family. The isolation is to be maintained until the recovery of the patient or, if the case terminates fatally, until the burial, which is always private.

This isolation at home is not always satisfactorily carried out. Among poor people living in one or two rooms it is well nigh impossible to keep the remainder of the family away from the patient. Poverty, however, is not as great a hindrance to isolation as are ignorance and carelessness. These latter faults are not confined to the poor, but are often found in a class of people for whom no excuse can be made. Some parents conceal the existence of a case of contagious disease in order that their well children may not be kept out of school. In their supreme selfishness, a few parents think it is worse to deprive their children of a few weeks schooling than it is to give the disease to others

For the cases of contagious disease so situated that there is liability of widely spreading the contagion, we have the hospital. For cases of small-pox there is the small-pox hospital always ready at short notice for use. For other contagious diseases, there are the Lowell Hospital and St. John's Hospital, where patients can receive excellent care and thorough isolation. The hospital accommodations for contagious diseases are, however, limited and would be totally inadequate in case of an extensive epidemic. If our city should ever erect a city hospital the first wards constructed should be those devoted to the treatment of contagious diseases.

Disinfection is another important step to be considered in preventing the spread of contagious disease. Since it is much easier to prevent infection than to render infected material harmless, the Board of Health advises the removal from the sick room of all unnecessary carpets, furniture, hangings, etc. In certain cases the health department inspectors personally remove all unnecessary articles from the room. In the different contagious diseases circulars are left with the family describing the nature of the disease, giving the most approved methods of disinfection. and calling attention to the principal seats of infection such as the skin in scarlet fever, the oro-nasal cavities in diphtheria, and the dejecta in typhoid fever. Directions are also given for disinfection of the apartment. The directions given for disinfection are such as have received the approval of the American Public Health Association. In addition the fumigation by burning sulphur is practiced in cases of scarlet fever and diphtheria. Although the fumigation does not destroy all disease germs, yet experiments and practical experience show that it is of some value, and in conjunction with the use of strong germicides as recommended, is the best method that the Board of Health is able to employ.

While we may look for much progress in the future of preventive medicine, yet we must not forget that the class of diseases under consideration may be made to nearly disappear by methods already at hand.

To confine these maladies to the smallest limits a Board of Health needs in every variety of contagious disease:

First. Prompt notification.

Second. Immediate transferal to hospital.

Third. A disinfecting plant.

The requisite of prompt notification means that the State should allow no one to practice medicine who is not sufficiently educated to make a reasonably early diagnosis. The second and third essentials mentioned mean that each city and town should provide ample hospital accommodations for all kinds of infectious disease, and should furnish a suitable plant for disinfection by super-heated steam or other approved method.

With these three essentials and the authority already given to Boards of Health, scarlet fever and diphtheria would become as infrequent as is small-pox. Occasional cases would occur from pre-existing sources of contagion, from imported cases, or from disease in animals, but on the whole, diseases now common would become rare.

There was no necessity that fifty deaths should occur from measles, scarlet fever, diphtheria and croup in 1890, nor that one hundred and sixteen deaths should occur from these causes in 1889. Nearly all of these deaths could have been prevented. The blame is not on the Board of Health. Boards of Health in all cities are repeatedly calling attention of city governments to the need for better facilities for isolation and disinfection of contagious diseases. City Councils do not act on these recommendations and thus allow the deaths to go on by their inaction.

The following quotation from the report of last year will bear repeating:

"It is certainly important for a city to educate its citizens, to supply them with water, with police protection, with well paved and lighted thoroughfares, and to protect them from the dangers of conflagrations. These and other duties are important for every municipality. The great duty, the duty of the highest importance, that of saving human life, is relegated by

all our cities to a subsidiary place. City Councils do not look with favor upon ordinances and financial measures intended to give health departments the support they deserve.

An autocratic government, enlightened by wisdom, often takes more interest in the sanitary welfare of its citizens than does a government of our fellow-men, jealous of encroachments on the rights of the individual."

The following table shows the number of deaths during the last three years, from the diseases that physicians are required to report to the Board of Health.

DEATHS FROM PRINCIPAL CONTAGIOUS DISEASES.

	1888.	1889.	1890.
Diphtheria and Croup,	113	100	41
Scarlet Fever,	13	13	7
Measles,	4	3	2
Typhoid Fever,	63	65	123
	193	181	173

This shows a steady decrease in the mortality from contagious diseases during the past three years, while there has been a co-existent increase in population. Even in face of the recent epidemic of typhoid fever the number of deaths from the above mentioned causes was less than in 1889. If we consider solely the diseases which the Board of Health tries to prevent from spreading by direct contagion, we find the following marked decrease in mortality during the past four years:

	1887.	1888.	1889.	1890.
Total deaths from diphtheria, croup, scarlet fever and measles,	200	130	116	50

To go still further back, we find that at no time since 1872 have there been fewer deaths from diphtheria, croup, scarlet fever and measles combined than in 1890.

While this large decrease is very gratifying, yet it is undoubtedly true that if any of these diseases should take on a severe type and become epidemic, the best efforts of the Board of Health would have but little effect in restraining the spread of disease. Nevertheless the blame for such epidemic would fall upon the Board of Health, for citizens, forgetting their own carelessness in spreading contagion forget also that the Board of Health has not sufficient hospital accommodations for the isolation of infectious disease.

NUMBER OF CASES OF CONTAGIOUS DISEASES REPORTED.

	1889.	1890.
Diphtheria and Croup,	295	157
Scarlet Fever,	155	230
Measles,	109	240
Typhoid Fever,	194	454

In regard to the above table the figures with regard to diphtheria and scarlet fever may be accepted as reliable. Measles is not reported as it should be, for many families who treat this disease without the aid of a physician do not notify the Board of Health. While undoubtedly there has been an epidemic of measles during December, 1890, yet the figures for the two years cannot well be compared, for in 1890, the inspectors of the Health Department have ferreted out many cases which would not otherwise have been reported. In regard to typhoid fever, reports are not as perfect as they should be. The fact that the number of cases of diphtheria has diminished nearly one half is very encouraging.

DIPHTHERIA AND CROUP.

For three years now the Board of Health has required physicians to report membranous croup as a contagious dis-

ease "dangerous to public health," for membranous croup is, according to those whose opinions have the greatest weight, a diphtheria of the larynx. The few physicians who do not believe in this identity must, at least believe that croup, from its mortality is a disease "dangerous to public health." The identity of membranous croup and diphtheria is shown in many ways to the health officers and to observing physicians. In fact, many Boards of Health now require the reporting of membranous croup, whereas, the measure was in force in only a few places at the time of its adoption by the Lowell Board of Health.

The following table shows a decided diminution in the amount of diphtheria during the past three years:

DIPHTHERIA.

	1888.	1889.	1890.
Cases reported	255	297	157
Deaths	113	100	41
Per cent. of fatal cases	44	33	26

Not only is there a diminution in the number of reported cases and the number of deaths, but the disease seems to be of a less severe type.

Going back a number of years it is shown that at no time since 1873 have there been fewer deaths from diphtheria and croup than in 1890. In the years 1876 and 1877, there were respectively two hundred and twenty-one and one hundred and eighty-four deaths from this cause.

The following tabulation of diphtheria by months shows nothing marked, except the comparative infrequency of the disease during the last three months of the year:

DIPHTHERIA.

1890.	Cases.	Deaths.
January	14	5
February	13	5
March	22	6
April	9	1
May	32	11
June	15	2
July	10	2
August	4	0
September	14	5
October	9	3
November	10	1
December	5	0
Total	157	41

SCARLET FEVER.

During the past three years the number of cases have increased, but as the disease has been of a less severe type, the number of deaths have diminished.

Scarlet fever	1888.	1889.	1890.
Cases reported	89	155	230
Deaths	13	13	7
Per cent. of fatal cases	14	8	3

The number of deaths from scarlet fever, seven, is small as compared with previous years. During the fifty-three years for which there is a record of the deaths, there are only five years in which there were fewer deaths from scarlet fever in proportion to the population than in 1890. In the early years there were occasionally over eighty and ninety deaths from this cause and in 1874 there were one hundred deaths from scarlet fever. As a result of what can be accomplished by sanitary work even when there is but little to work with, the number of deaths during the last decade when there has been a Board of Health, is much less than in previous decades.

	1841–'50.	1851–'60.	1861–'70.	1871–'80.	1881–'90.
Deaths from scarlet fever	292	260	359	259	124

At the close of 1889, scarlet fever had become epidemic, forty-three cases being reported in December alone. As stated in last year's report, the care of the physician and parents in preserving isolation, relaxes as the patient's fever abates. To lessen the care given a scarlet fever patient because he feels more comfortable upon abatement of the fever is dangerous practice for the welfare of the patient and of the community. For the patient the period of desquamation about to ensue, is the period most fraught with complications. For the community, this period of skin-peeling is dangerous, for it is then that the disease is most liable to be transmitted. Physicians who ought to have known better, requested in some cases that isolation be omitted at the end of a week and that the patient be allowed to see his playfellows. To enforce further care in this respect the Board of Health made and legally published the following addition to its rules for contagious disease:

Rule 5. In scarlet fever no patient will be considered well and freed from isolation, until the attending physician, or a physician employed by the Board of Health, certifies that he has personally inspected the patient, found that the period of desquamation has ceased and that the patient is no longer a source of danger. No such certificate will be received by the Board of Health until at least three weeks have elapsed from the beginning of the illness.

Under the rigorous enforcement of this rule the number of cases of scarlet fever diminished from forty-three in December to twenty in January and to nine in February. Unfortunately, this decrease has not been maintained. The above rule has been enforced as well as could be done with imperative calls upon the inspectors for other important work. The carelessness

of parents and physicians is, however, apparently no less. The only cause for congratulation in the following table is that the disease has been so mild.

SCARLET FEVER.

1890.	Cases.	Deaths.
January	20	1
February	9	0
March	14	1
April	21	0
May	23	0
June	14	0
July	14	0
August	18	0
September	33	1
October	17	2
November	22	2
December	25	0
Total	230	7

MEASLES.

A table of the comparative number of cases of this disease would be untrustworthy, for a large proportion of the cases are treated without a physician's aid and are not reported to the Board of Health. Thus, a statement that one hundred and nine cases were reported in 1889, and two hundred and forty cases in 1890, shows nothing definite, for in the latter year a large number of cases were ferreted out by the Health Department inspectors, as mentioned below. In 1890, there were but two deaths from measles. This is the smallest mortality since 1884, when there were no deaths from this cause. In the epidemic of 1887, one hundred and twelve people died from measles alone, and many more from its pulmonary complications.

In 1890, the following table, although unreliable as to cases reported, nevertheless gives a good idea as to the increase of the disease in the latter part of the year:

MEASLES.

1890.	Cases.	Deaths.
January . . .	0	0
February . . .	0	0
March . . .	2	0
April . . .	9	0
May	7	0
June. . . .	1	0
July	4	1
August . . .	1	0
September . .	5	0
October . . .	27	1
November . .	16	0
December. . .	168	0
Total. . .	240	2

In the spring of 1889 measles had been especially prevalent in Ayer's City, and in 1890 the disease after a period of quiescence began in the fall to travel from Ayer's City through to Chelmsford street, affecting mostly those families whose children attended the Plain street school. The cases reported were so few that it was only by indirect means that the Board of Health became aware of the epedemic form that the disease was assuming. As soon as this was realized an inspector was sent to the Plain street school and obtained a list of all absentees. Every house where children were at home from school was visited and in nearly every case it was found that children were sick with the measles or were convalescing from it. In many cases children after being kept indoors a week with measles, were allowed to go out to play with their friends. At times while one child was at home with measles, other children in the family had continued to attend school. In these cases the mischief was already done In all new cases, the house was promptly placarded and was visited every few days to see that the children were kept at

home. The following circular, warranted by existing circumstances was left at each house.

MEASLES.

Measles is fully as contagious as scarlet fever and diphtheria, and at times is even more fatal. In 1887 there were one hundred and twelve deaths from measles in this city.

Householders and school teachers are requested to carefully read the following extracts from the Public Statutes and the Regulations of the Board of Health.

"When a householder knows that a person within his family is sick of any disease dangerous to the public health, he shall immediately give notice to the Board of Health, and upon the death, recovery or removal of such person, the rooms occupied, and the articles used by him, shall be disinfected by such householder, in a manner approved by the Board of Health."

"No pupil shall be allowed to attend the public schools while any member of the household to which said pupil belongs is sick of measles or during a period of two weeks, after the death, recovery or removal of such sick person; and any pupil coming from such household shall be required to present to the teacher of the school the pupil desires to attend a certificate from the attending physician or Board of Health, of the facts necessary to entitle him to admission in accordance with the above regulation."

"The patient must, as far as possible, be nursed by only one person, and no member of the family coming in daily contact with the patient shall be allowed in public."

"The foregoing rules relative to contagious diseases shall be in force until the Board of Health removes from the premises where the illness has occurred, the placards which notify the

public of the existence of the disease. Such placards shall not be removed except by an agent or inspector of the Board of Health."

Therefore, if a parent conceals the existence of a case of measles, or if while one of his children has the disease, he allows the other children to play with children of another family, or to attend school, he is liable to the fine provided for a violation of the regulations of the Board of Health.

All clothing and bedding should be soaked for an hour in a solution of carbolic acid, two ounces to the gallon of water. After soaking, the clothing should be treated with boiling water for an hour. Never send the clothing to a laundry. Articles which cannot be treated by boiling should be exposed to the fumes of burning sulphur in a closed room. In case of death the funeral must be private.

JAMES B. FIELD, M. D., Chairman.

Adopted by the Board of Health,
76 Merrimack Street, Lowell, Dec., 1890.

After visiting the Plain street school the inspectors went through the list of absentees from the Highland school, and the various primary schools in the Highlands. This hunting up of cases and isolating them seemed to check in large measure the spread of measles. Unfortunately the best efforts of the inspectors were often thwarted by parents. In measles especially, many parents believe that it is less harmful to spread the disease to others than it is to deprive their children of a few weeks attendance at school. Parents have often quoted their family physician as authority for the statement that measles cannot be spread indirectly through the clothing as can scarlet fever and diphtheria. How any scientific physician can

deny that measles can be transmitted indirectly, is difficult to understand. The contagious principle may not be as tenacious as in some other diseases but there is certainly incontestable evidence that the disease may be spread from place to place through the clothing. To deny this evidence, is to embarrass the Board of Health in its work.

It is also a mistake to belittle an attack of measles, to have no fear of it because of its mildness. It will do no harm to again and again call attention to the fact that less than four years ago there were more than a hundred deaths from measles in a few months. Even in our present epidemic, although the original disease has been almost, without fatality, yet the complications and sequelæ of the measles have been severe. Whooping-cough, broncho-pneumonia, laryngitis, pleurisy, diarrhœa and other affections following after the measles render it a disease undoubtedly "dangerous to public health."

TYPHOID FEVER.

The proper time for writing an account of the typhoid fever epidemic of the fall and winter of 1890 and 1891 has not yet arrived. The epidemic has not yet entirely abated nor have the investigations as to its cause been completed. During the year there were one hundred and twenty-three deaths from this cause, half of which occurred during the last three months of the year.

Typhoid Fever in previous years. During the fifty-three years of which a record has been kept, there were from sixteen to one hundred and twenty-three deaths from typhoid fever each year, or an average of thirty-eight deaths a year, thus showing that typhoid fever has been prevalent in Lowell for many

years. In the early years from 1836 to 1843 there were nearly every year more deaths proportionately from typhoid fever than in 1890. In 1846 there were one hundred and one deaths and in 1847, ninety-five deaths from typhoid fever, in each case over twice as many in proportion to the population as in 1890. In 1872 there was an epidemic of typhoid fever almost as extensive as that of 1890.

The foregoing statements must, however, be modified by the fact that typhoid fever was not always recognized as a distinct disease, and readily diagnosticated in the early years of our city's history.

TYPHOID FEVER.

1890.	Cases.	Deaths.
January	23	5
February	29	6
March	17	4
April	5	6
May	19	8
June	16	9
July	8	6
August	15	6
September	27	10
October	69	10
November	122	28
December	104	25
Total 1890	454	123
Total 1889	194	65

A comparison of this table with that of 1889 will show that while the disease has been more prevalent throughout 1890, that there has been no marked increase in the number of cases and deaths until in September and October. The Board of Health regrets to reiterate the statement made in last year's report, that typhoid fever is not reported with the same promptness and regularity as are the more contagious diseases,

scarlet fever and diphtheria. Because this disease is most frequently introduced into the system by contamination of drinking water with typhoidal germs, is no reason why it should not be promptly reported. The disease at times is spread by direct contact with the patient and his discharges; the discharges themselves may pollute the well water or perhaps introduce the disease germs into a privy vault where they may multiply; all these conditions and others may be ascertained and perhaps prevented by a visit of the health officer, whose visit also may be the means of remedying unsanitary plumbing and other defective conditions. Even if nothing were gained by reporting the disease, other than an opportunity to make an scientific investigation as to the causes of the malady, then it should be reported. It seems as if some physicians were interested in disease wholly from a financial point of view rather than partly from a scientific point of view. The table seems to show that twenty-seven per cent. of the typhoid fever cases were fatal this year. No one for a moment pretends that this is so. The best results in our hospitals and private practice are far ahead of this. Exact figures cannot be given but certainly this percentage of deaths is about three times greater than the reality. It would be interesting reading to give a list of physicians, who have reported no cases of typhoid fever, but would perhaps serve no wise end.

As stated earlier in the report, the inspector records the name and residence of the patient, the sanitary condition of the premises, the source of the water supply and the milk supply. He also leaves at the house a circular of which the following is a copy:

TYPHOID FEVER.

"This disease is contagious and infectious in its nature. The poisonous germs are contained mostly in the discharges from the bowels of the patient, and unless these discharges are properly cared for, they may infect any place in which they are deposited.

The disease is most frequently contracted by drinking water thus infected. The discharges when emptied into a leaky vault or drain, may by filtration infect a well or other source of water supply, or when they are thrown away near a stream of water, may carry the typhoidal contagion to those using the water and living a long distance from the stream. Water thus infected has transmitted the disease to those drinking milk brought from a dairy where the cans were washed with the water, or the supply of milk diluted by it. Ice may also be a seat of the infection.

The atmosphere of the sick chamber may become infected by the typhoidal dejections, and also by the escape of germs lurking in the foul gases of house drains and privy vaults.

To prevent the spread of typhoid fever the discharges should be disinfected as soon as they are passed from the bowels. This is best done by receiving them in a vessel containing a solution of good chloride of lime (eight ounces to a gallon of water). The vessel should then be immediately removed from the room, and should be shaken gently so as to mix its contents thoroughly with the disinfecting solution. After standing, tightly covered half an hour or more for the disinfectant to act, the vessel should be emptied into the water closet or privy vault and then should be thoroughly cleansed, allowing some of the disinfecting solution to remain in it. Typhoidal dis-

charges should never be thrown into a vault without disinfection, for it is extremely difficult to thoroughly disinfect a privy vault. Water closets should be treated daily with the chloride of lime solution. Powdered chloride of lime may be sprinkled over the surface and sides of privy vaults. This disinfectant costs only a few cents a pound.

If not able to obtain drinking water free from suspicion, it should be boiled for half an hour shortly before using. Never use water from wells situated in thickly settled portions of a city.

The plumbing should be properly trapped and ventilated. All rubbish and filth around the house should be taken away.

If possible, the patient should be in a warm, sunny, well-ventilated room, apart from the rest of the family, and he should be nursed by one person only. No furniture should be allowed in the room excepting that absolutely necessary, and all articles difficult to disinfect (such as woolen carpets, heavy curtains and drapery) should be removed from the room.

Upon the recovery, removal, or death of the patient, the sick room with its furniture, bedding and clothing should be thoroughly disinfected.

JAMES B. FIELD, M. D., Chairman.

Office of the Board of Health,

Lowell, Mass., May 19, 1890.

Inasmuch as one of the daily papers has taken credit to itself for being the first to advise our citizens to boil the drinking water, it will be interesting to note that the foregoing circular which was issued in 1888 and reissued in 1890, advises the boiling of all water that is not free from suspicion.

The cause of Typhoid Fever:—In studying the cause of the present epidemic in Lowell, it will be wise to make a brief presentation of the most recent views as to the cause of typhoid fever.

The disease is caused by a specific germ, the typhoid bacillus, which is produced in the intestinal discharges of a person sick with typhoid fever. This germ is quite difficult of detection. It multiplies outside the body and again causes typhoid fever by introduction into the system through one of many means, the most common of which is by drinking infected water. There are now numerous instances on record where typhoid fever epidemics have been caused by drinking water into which the intestinal evacuations of typhoid fever patients have been discharged, and in such water the specific germ of the disease has been detected. Another source of typhoid fever is infected milk. The milk may receive the disease germs directly, or through infected water which has been used to dilute the milk or to wash the milk cans. Ice may also become infected. Another source of infection not to be ignored is that from person to person. A nurse with unclean hands may thus infect other members of the house directly, or indirectly through their food. Recent investigations seem to show that the disease germ can be transmitted through the air. It may perhaps retain sufficient vitality to be thus transmitted, and taking lodgment in a privy vault or other source of filth may multiply indefinitely. In their tranmisssion through the air these germs may perhaps be carried into a pantry and infect an uncovered dish of milk, or a plate of cold potatoes or other vegetables.

In addition to the foregoing means of infection, it seems probable that certain peculiar states of the soil, of the atmosphere, and of the individual himself are necessary in order that the typhoidal germs should flourish and thrive.

Thus, while infected drinking water is the principal cause of the disease, there are so many other factors at work that it must be extremely difficult to institute an investigation as to why typhoid fever, never absent from Lowell, should assume an epidemic form in the last few months of 1890.

It may perhaps do no harm to remind those opposed to sanitary reforms, that leaky privies, improper plumbing, and insufficient sewage are indirect causative agents of the disease.

Unsanitary conditions found in Lowell:—Among the unsanitary conditions which have a predisposing, if not a direct influence upon disease are those relating to disposal of human excrement. The defects in house drainage and vaults have been dwelt upon at length earlier in the report. There were at the beginning of the year, two thousand eight hundred and seventy-eight privy vaults, or apologies for vaults in the city. Of these fourteen per cent. were positively bad, and only about one third were properly constructed; and yet complaint is made that the Board of Health removes the vaults too fast How much of our older plumbing is leaky and improperly trapped cannot be said. The Board can make but slow progress in remedying this state of affairs. The lack of sewer facilities has been repeatedly called to the attention of City Councils, and portions of the city still continue to saturate the soil by discharging their house drainage into dry wells.

Builders are allowed to construct tenement houses without regard to sunlight and ventilation. Take it altogether, with improperly constructed houses, faulty plumbing, leaky vaults, and insufficient sewerage Lowell is a fruitful soil for any disease; and yet people say the Board of Health is too active.

Before passing to the consideration of the more direct forms of infection it should be said that the disease was distributed quite evenly over the city. No marked preponderance was noticed in any one locality. No particular lines of sewers were affected. The hilly portions and the lower city suffered alike. Both rich and poor were affected. As regards the milk supply, no evidence pointed to its contamination.

The water supply:—This may be divided into five classes as pointed out by Prof. Sedgwick.

First. The city water taken from the Merrimack River, a short distance above the Pawtucket dam, and distributed to us from the reservoirs through the water pipes. The Merrimack River receives the sewage from the New Hampshire cities of Nashua, Manchester, and Concord, and from the Nashua River, the sewage from the factories of Pepperell and the larger manufacturing centres of Clinton and Fitchburg in our own state. Nashua is about fourteen miles above Lowell. Less than two miles above Lowell, Stony Brook empties into the Merrimack River. This brook receives the drainage from a few mills and houses situated on its banks.

Second. The canal water. This is river water drawn just above the dam into two large canals through which it is conducted by a well arranged set of branches and connections so as to supply motive power to about ten large manufacturing corpora-

tions. Some of the corporations pump into their mills this canal water, receiving it in tanks from which it is drawn for water-closet and washing purposes. Although the use of this water as a beverage is forbidden, many employees prefer it, because of its coolness and for other reasons. The canal water is in some cases contaminated by the discharges from the mill water-closets. Ocular evidence shows, despite the vigilance of those in charge, that people in Little Canada and those living along the bank of the canal on Suffolk street occasionally throw vegetable and animal refuse into the water. The sewage from the main wards of the Lowell Hospital enters the northern canal. The sewage from the corporation boarding houses in the majority of cases does not enter the canal. In the places where this does occur, the sewage is discharged into the canal much nearer its mouth than its head, and so contaminates the canal for only a short distance.

Third. The Belvidere reservoir of water pumped from the canal and used by the corporations for fire purposes. This also supplies a few private houses, but probably is never used for drinking purposes.

Fourth. Well water.

Fifth. Spring water, brought into the city and sold in carboys.

Of all these five sources of water supply, chemical examinations have, from time to time, been made. With the city water such examinations have been made frequently, and as far as chemical examinations go, show it to be a satisfactory water for drinking purposes. The unreliability of the chemical test has been shown by Prof. W. T. Sedgwick of the Massachusetts Institute of Technology, who is investigating for the

State Board of Health, the cause of the typhoid fever epidemic in Lowell. Prof. Sedgwick found in this city a well strongly impregnated with organic refuse, in fact, one of the worst wells in the state, the water of which was simply diluted sewage. This water, however, contained no disease germs, and those who drank of it apparently had as little illness as those who drank of water that was much better chemically. Further mention cannot be made of this without anticipating Prof. Sedgwick's report. It is spoken of simply to show that some waters of bad chemical characteristics may be drank with impunity. The converse is equally true, that a water with a satisfactory chemical analysis is not always safe to drink. The true test of water is the presence or absence of disease germs. While the useful chemical analysis must not be ignored it must be relegated to a place of subsidiary importance in the examination of drinking water, and the chief place given to the bacteriological tests.

Cause of the epidemic. This is unknown. From the state of affairs above mentioned we can hazard some hypotheses as to the cause.

The canals of course, have been in the same condition for many years as at present. The fæcal discharges of patients in the Lowell Hospital are disinfected according to the most approved methods before being poured into the soil-pipe. If however, one typhoidal dejection should not be thoroughly disinfected, an epidemic might ensue among those drinking the canal water. It is perfectly possible for operatives to be at work a week with typhoid fever and by using the closets in the mill to discharge their fæcal matter into the canal and thus give the disease to operatives in a mill futher down the canal, if these

latter were foolish enough to drink the water. If the canals were at fault the disease would be most prevalent among the operatives, whereas it has affected people who never used canal water nor came in contact with operatives sick with the disease. Mill operatives do not seem to have been affected more than other classes of people.

City water is of course liable to contamination. There has, however, been no unusual amount of typhoid fever in Nashua or Concord, although it has been quite prevalent in Manchester, about thirty miles above us. Along the bank of Stony Brook at North Chelmsford, Dr. Abbott of the State Board of Health and Prof. Sedgwick found that there had been seven or eight cases of typhoid fever from the last of August to the middle of November. At least four of these cases were in operatives who, the first week of their illness, remained at work in a mill which discharges the refuse from its water-closets directly into the brook. This is certainly a probable cause for the beginning of Lowell's epidemic, but would not account for its continuance late into December unless there were more recent cases along the brook. It is possible, however, that the disease germs once entering our water-mains early in the fall, did not all escape at once from the house faucets, but that some remained in the dead ends of pipe and in the domestic filters, only to multiply and escape later on. The idea that the disease once started, can be propagated through the sewers of a city does not seem borne out by what we know of the distribution of the disease, or of the characteristics of disease germs.

As the disease is constantly present in Lowell there are probably several causes at work. The most plausible explanation seems to be a combination of the following agencies:

First. An unforeseen contamination of the drinking water causing several cases of typhoid fever. Second. Suitable atmospheric conditions facilitating the multiplication of germs in this water. Third. These same atmospheric conditions increasing the vitality of germs previously latent in old privies, etc. Fourth. The possible transferral of some cases by means of the canal water after the disease once started. Fifth. The transferral of the contagion from person to person. The foregoing explanation is only a hypothesis. No one knows the exact cause of the disease. Prof. Sedgwick is making bacteriological examinations of the water from various localities in the river, canals, reservoirs, house-taps and wells. The ice is also being examined. While this examination may furnish no definite information, it is certain that until the results of this investigation are published no positive opinion should be formed. The epidemic in Lowell has caused an epidemic in Lawrence. In addition to giving that city our sewage in the river, we are also giving to Lawrence the typhoidal bacilli which are in her drinking water. Even if all dejecta were disinfected we would be likely to transmit the disease by cases in their first week's illness before a diagnosis was made.

Lessons to be Learned.—Continue to have ashes and swill removed in a cleanly manner. Have fewer dumps, fewer and better privy vaults, better plumbing, more sewers.

Have physicians report typhoid fever cases more thoroughly and insist on thorough disinfection of the stools.

View all water liable to pollution, with suspicion and if obliged to drink it, do so only after boiling fifteen minutes.

Remove all sources of pollution from the canals and make it impossible for operatives to drink canal water.

Remember that although it is not proven that the river has caused the epidemic, that yet it is liable to pollution. A river cannot be used as a sewer and as a water supply. Sooner or later one or the other use will have to cease. To remove sewage from the river it will have to be conveyed in a trunk sewer to the sea or utilized on the land which would require a particular kind of soil and a large acreage. These measures would relieve Lawrence and the cities below us. Lowell would still receive the sewage of New Hampshire and of Stony Brook. To purify this water would mean filtration, possibly by mechanical means or better through the soil requiring a large amount of land; expensive in any case. Last of all; the possibilities of a new water supply. Fortunately this matter is in the charge of an able and well informed Water Board, thoroughly qualified to guard the interests of the city.

INFLUENZA.

At the time of writing the last annual report this disease was prevalent in Lowell. The epidemic which was so wide spread through the world made its first appearance in Lowell some time between December 17th, and 21st, 1889. It made no appreciable effect upon the death rate for December. The disease seemed to be at its height in Lowell in the week ending January 11th, 1890. The striking difference between the number of deaths in January of 1889 and of 1890 may be shown in the following table, where there are two hundred and forty-six deaths in January, 1890, the largest number ever occurring in any one month.

Deaths in January	1889	1890	Increase in 1890.
Influenza	0	11	11
Phthisis	18	31	13
Bronchitis	6	25	19
Pneumonia	18	44	26
Heart Disease.	15	27	12
Old Age	3	15	12
All other causes	89	93	4
Total	149	246	97

As shown in the above table, influenza itself is to be credited with but a small proportion of the increased mortality. The greater part of the deaths have occurred from other affections occurring as complications or sequelæ of the influenza. Among these diseases may be mentioned especially, maladies which chiefly affect the respiratory tract, such as pneumonia, bronchitis, and consumption. Many of the deaths from consumption would have occurred later in the year as would the deaths of those already enfeebled by heart disease or by old age.

In February 1890 there were five deaths from influenza, a few other deaths from influenza occurred in the spring.

Taking all things into consideration, it seems a conservative estimate to say that in 1890 over a hundred deaths were due directly or indirectly to influenza.

A most able account of the natural history of influenza, and a thorough investigation of the recent epidemic in this state may be found in the twenty-first annual report of the State Board of Health.

OTHER CONTAGIOUS DISEASES.

No other diseases of a contagious or infectious nature have been especially prevalent in 1890 unless we except whooping-cough, from which there were nineteen deaths as against five

in 1889. There have been ten deaths from cerebro-spinal meningitis, and five from erysipelas. There have also been two deaths reported from hydrophobia. Although no attempt was made in these cases to corrobrate the diagnosis by inoculative experiments, yet it seems almost positively certain, that both persons, bitten by the same dog, died of rabies.

As in former years, the Board of Health has furnished free vaccination at its office every week day from four to five P. M. During the year 1890, three hundred and seventy-four persons have been vaccinated without charge. The small-pox hospital is in good repair, always ready for use.

CONSUMPTION.

Although consumption is contagious in its nature, it is not probable that any efforts of Boards of Health will greatly restrict its transmission from person to person. In the early stages before a physician is consulted, the patient, ignorant as to his malady, will continue to scatter the tubercle bacilli abroad in his sputa. Even when the diagnosis is made, the average patient will take no care as to the destruction of his sputa. It will be only in hospitals and among the more intelligent private families that the transmission of the disease in this manner can be prevented. No matter how strong efforts may be made to prevent the spread of tuberculosis, it seems probable that people will always be exposed to the germs of this disease, and that the most important thing to do is to keep the body in such a condition of good health that it will not furnish a suitable soil for the lodgment and multiplication of the tubercle bacilli.

Much can be done to prevent the transmission of tuberculosis from animals to man. Many cattle are consumptive

and transmit the disease to human beings through tuberculosis meat and milk. Here is a legitimate chance for governmental inspection of dairies and cattle ranches, with subsequent destruction of diseased animals, thus minimizing the chances of infection from this cause.

During 1890 there have been two hundred and twenty-nine deaths from consumption, variously designated as consumption, tuberculosis, chronic pneumonia, phthisis, etc. There was a Similar number of deaths from the same cause in 1889. Adding twenty-four deaths from other tubercular affections we have a total of two hundred and fifty-three deaths from tuberculosis or nearly thirteen per cent. of the mortality which is about the percentage in the whole state.

CHOLERA INFANTUM AND DIARRHŒAL DISEASES.

	1889	1890.
Phthisis	229	229
Cholera Infantum	215	218
All Tuberculosis	250	253
All Diarrhœal Affections	269	254

The figures given above show that in the race for first place in the list of deaths consumption is first, with cholera infantum a close second. If with cholera infantum we include all diarrhœal diseases and with consumption, all tuberculosis, we find a few more deaths from the diarrhœal affections than those of the tubercular nature. It will be observed that the figures for 1890 are nearly identical with those of 1889.

DEATHS FROM CHOLERA INFANTUM.

	1889.	1890.
January	1	1
February	5	2
March	0	1
Total first quarter	6	4
April	4	5
May	5	3
June	36	10
Total second quarter	45	18
July	68	82
August	46	67
September	32	28
Total third quarter	146	177
October	13	13
November	2	4
December	3	2
Total fourth quarter	18	19
Total for the year	215	218

From a comparison of these figures we are again forcibly reminded that cholera infantum is a hot weather disease, over four-fifths of the deaths occurring in the third quarter of the year, and sixty-eight per cent. in July and August alone. In 1889 the increase in cholera infantum began early in June. In 1890 there were more cases in July and August, but fewer in the preceding and following month. Taking the four months June, July, August and September together, there is but little difference between the two years. In this period there were one hundred and eighty-two deaths in 1889, and one hundred and eighty-seven in 1890.

The cause and prevention of cholera infantum have been dwelt upon at length in the last two reports of this Board and may be summed up briefly.

The exact cause is unknown. The effect of heat in producing changes in milk and increasing the number of micro-organisms therein cannot but have an injurious influence upon children already debilitated by the hot weather.

In the prevention of this disease there are two factors; the removal of the child from the heat of the city, and the preservation of the food supply.

To remove children from the hot and crowded portions of the city is only possible in a limited way by means of such aids as the country week. In other cities a temporary removal during the heat of the day will often make a sick child pick up wonderfully. This is done on a large scale in New York by means of the floating hospitals. If human life is worth saving, country excursions should be tried for the poor of Lowell. At any rate mothers who cannot leave the city should take their babies into the commons and parks for fresh air.

The Board of Health distributes every summer a circular giving concise directions as to the feeding of infants and the preservation of food. The chief food for infants, next to the breast, is cow's milk. In hot weather this should be kept in a refrigerator or else sterilized or boiled. The indifference among certain classes of our citizens is so great that they often will not call a physician for their sick children, and even if they are informed as to the preservation of milk and the proper methods of its administration, they will not follow such information. For these classes is needed a summer corps of physicians devoting their entire time to the work, each physician going over his district every day. This plan has been adopted in New York with excellent results. In Lowell the Board made for two summers an attempt to do

something of this nature. One or two physicians were employed for a few hours each day, and in isolated cases much good was obtained. The territory, however, was too large for the force at work. To accomplish much each patient with bowel trouble should be seen daily, directions should be hammered into the parents, and if necessary, the food should be prepared by the physician himself. It is only by constant watching that cholera infantum may be checked among the more ignorant classes. The Board of Health in 1890 felt that it was almost useless to continue this medical inspection unless it could be done on a larger scale with more system and thoroughness. Accordingly all that was done was to distribute the circular upon the care of children. When a city government believes that the lives of poor children are worth saving and will appropriate sufficient money for this work it will certainly be carried out.

HEALTH BULLETIN.

As in former years, the Chairman has prepared a monthly bulletin of the mortality of the city. For two years now, this bulletin has given all the statistics usually found in the bulletins of large cities. Each disease is arranged according to the usual system of classification, and under the disease is given the sex and approximate age of the deceased, together with the number of deaths from the same cause in the corresponding month of the previous year. A comparative table of the number of deaths, the population, the mortality rate, the percentage of infant mortality and of zymotic diseases, and the number of contagious cases reported, is made for the same month of the current and preceding years. The birthplace, place of death and place of interment are all recorded. In

addition, the bulletins of 1890 contained for the first time a tabulation of the parentage of the deceased. This table is exceedingly useful as showing what nationalities among our citizens succumb the most readily to disease.

The standard barometer and thermometers obtained from the government have, as in 1889, been under the charge of Mr. F. E. Saunders who has made observations at stated hours two and three times daily, keeping records of the barometer and of the maximum and minimum thermometers. Calculations of the dew-point, of the relative and absolute humidity are also made; the direction of the wind, and the state of the weather are noted. The daily rainfall has been kindly furnished from readings of the Locks and Canals gauge. A summary of the meteorological observations thus made is published each month in the Health Bulletin.

Although Lowell is only following the example of other cities in publishing each month a tabulation of the deaths and state of the weather, yet the average citizen of an unscientific turn of mind is apt to enquire as to the utility of such measures. Registration of vital statistics and meteorological observations will not reduce the mortality rate of Lowell in one year, nor perhaps in several years. In studying any disease much aid is derived from a knowledge of the atmospheric conditions under which it prevails, and of the age and sex which are most susceptible to its influences. Such knowledge may at some time prevent the average citizen from having a certain disease, or may conduce to his speedy recovery when once the disease is upon him.

VITAL STATISTICS.

The City Physician is required by law to compile each year a list of all causes of death, tabulated by months, by age and sex. Although such a table is but little more than a summary of the monthly Health Bulletin, it is unnecessary to publish it twice, and for such details the reader is referred to the report of the City Physician. The following figures are taken from the Health Bulletin.

Number of Deaths	1889	1890
Males	874	926
Females	1,025	1,033
Total	1,899	1,959
Children under one year	569	580
" " two years	687	703
" " five years	811	810
Per cent. of total deaths under five years	42.7	41.3
	1889	1890
Diarrhœal diseases under one year	206	202
" " " two years	237	233
" " " five "	246	237
All Ages	269	254
Per cent. of total deaths from diarrhœal diseases	14.1	12.9
" " " " " " Zymotic diseases	25.4	25.9

The foregoing figures show an increase of sixty deaths over 1889. When it is considered that the year opened with an increase of nearly a hundred deaths in January caused by "la grippe", the fact that there has been an increase of only sixty deaths for the year is not very bad. For the last eleven months of the year there were one thousand seven hundred and fifty deaths in 1889 and only one thousand seven hundred and thirteen in 1890. It will be seen that in the deaths of children under five years and in the deaths from diarrhœal

diseases there has been a slight decrease. The increased number of deaths has been in the adult population.

Birthplace	Of Deceased.	Of Parents.
Lowell	879	180
Massachusetts, elsewhere	136	196
Other States	247	457
Ireland	306	1,197
Dominion of Canada	249	1,174
Great Britian	103	370
Other Countries	16	65
Unknown	23	279
Total	1,959	3,918

Since two-fifths of the deaths are those of young children, it would naturally be supposed that more of the descendants were born in Lowell than in any other place, and such is found to be the case.

The parentage of the deceased forms an instructive table of the parents whose birthplace was known, seventy-seven per cent. were born outside the United States, and yet it does not seem possible that three-fourths of our population are of foreign parentage. The number of deaths of those having Canadian parents is nearly equal to those of Irish parentage, and yet it seems as if there must be more Irish stock than Canadian stock in the city. The figures would suggest that there are more deaths in proportion among the French-Canadian population than among the other residents of our city. In the absence of census returns as to the proportionate number of each nationality resident in Lowell, the Board will hazard no definite opinion as to the proportionate mortality among different classes of people.

PLACE OF DEATH.

Ward One	264
Ward Two	291
Ward Three	275
Ward Four	261
Ward Five	460
Ward Six	244
Almshouse	58
Lowell Hospital	29
St. John's Hospital	77
Total	1 959

PLACE OF INTERMENT.

Catholic Cemetery	1,247
Edson Cemetery	429
Lowell Cemetery	108
Other Cemeteries	9
Removed from City	166
Total	1,959
Still-births during the year	116

DEATHS CLASSIFIED.

	1889	1890
Diseases of the nervous system	267	253
Diseases of the circulatory system	143	150
Diseases of the respiratory system	214	243
Diseases of the digestive system	92	86
Diseases of the genito-urinary system	55	63
All other local diseases	9	10
Total deaths from local diseases	780	805
Total deaths from zymotic diseases	484	508
Total deaths from constitutional diseases	336	331
Total deaths from developmental diseases	258	272
Total deaths from violence or unknown causes	41	43
Total deaths from all causes	1,899	1,959

In addition to the slight variations observed from year to year the most striking changes are in diseases of the respiratory system (a gain of twenty-nine) and in zymotic diseases (a gain of twenty-four). The increase in respiratory

diseases is due to the increase in pneumonia and bronchitis caused by the influenza. The greatest increase in zymotic disease is in typhoid fever. Leaving these two classes of affections out of account there is very little difference between the remaining causes of death in the two years as can be easily shown by the following table.

	1889	1890
Deaths from zymotic diseases	484	508
Deaths from diseases of the respiratory system	214	243
Deaths from all other causes	1,201	1,208
Totals	1,899	1,959

PRINCIPAL CAUSES OF DEATH.

	1889	1890
Cholera infantum and other diarrhœal diseases	269	254
Phthisis and other tuberculosis	250	253
Pneumonia and bronchitis	195	220
Infantile debility, marasmus and inanition	159	164
Heart disease	141	148
Typhoid fever	65	123
Apoplexy and paralysis	69	74
Old Age	55	66
Disease of brain (unclassified)	64	60
Convulsions	63	60
Diseases of Kidneys	46	56
Meningitis	49	51
Diphtheria and Croup	100	41
All other Causes	374	389
Totals	1,899	1,959

The striking changes are the great falling off in diphtheria, and the increase in typhoid fever and in pneumonia and bronchitis. This increase in lung diseases was due to the epidemic of influenza. The changes are shown well in the following table.

DEATHS IN 1890.

Increase or decrease as compared with 1889.

	Decrease.	Increase.
Cholera infantum and other diarrhœal diseases	15	
Phthisis and other tuberculosis		3
Pneumonia and bronchitis		25
Infantile debility, marasmus and inanition		5
Heart disease		7
Typhoid fever		58
Apoplexy and paralysis		5
Old age		11
Disease of brain, (unclassified)	4	
Convulsions	3	
Disease of Kidneys		10
Meningitis		2
Diphtheria and croup	59	
All other causes		15
Totals	81	141
Total increase		60

DEATH RATE.

If it is presupposed the censuses are accurate, then close approximations as to the mortality rate can be made in census years. To judge of our population since 1885 by the rate of increase between the censuses of 1880 and 1885 is erroneous, for the population has increased faster since 1885 than it did before that date.

Population, census of 1880	59,485
Population, census of 1885	64,051
Population, census of 1890	77,605

If the increase of the last five years is supposed to be divided equally between each year we can revise our death rates somewhat as follows: There is an increase of 13,554 in population during the last five years. Although it is not necessarily a fair assumption, we will reckon an annual increase of two thousand seven hundred and ten, or two thousand

seven hundred and eleven in the population and revise our death rate as follows:

Year.	Population.	Death-rate.
1886	66,761	22.45
1887	69,472	26.94
1888	72,183	24.42
1889	74,894	25.38
1890	77,605	25.24

The death rate of 1890 is lower than that of 1889 or 1887 and that of a few earlier years. If it had not been for the epidemics of typhoid fever and influenza, both of them unavoidable so far as the Board of Health was concerned, the death rate would have been still lower. The year 1890 is not a fair year to judge by. Nevertheless, the average death rate for the last five years has been high, higher than in the two preceding periods of five years. In 1891 the death rate will probably be much lower. The influenza has carried off many who were debilitated by chronic ailments, and the typhoid fever has removed others. Many children have passed safely through the measles and scarlet fever. It is to be hoped that diphtheria will remain as comparatively quiescent as it did in 1890, and that cholera infantum will not be as prevalent. If there is a reduction in the death rate, those who are illogical enough to attribute an increased mortality to the Board of Health, ought also to give the Board the credit for any diminution that may occur in the number of deaths.

It must be remembered that annual reports are not written solely for educated physicians and sanitarians, but also for all of our citizens, many of whom have no scientific training. For this class, it may be necessary to show how little control a Board of Health has over many forms of diseases.

Take for instance, the principal causes of death as given a few pages back. In this table is included every disease which averages over forty-five deaths a year. The deaths from diseases of the heart, kidneys, or nervous system, from infantile debility, acute lung diseases or old age could be influenced but little, directly or indirectly by a board of health. In consumption the health officer cannot prevent inherited tendencies, and can do but little to prevent the spread of the disease by direct infection. The hot weather of the summer will always cause diarrhœal diseases.

Even if the Board of Health could afford to employ enough physicians to care for all the infants, and to prepare their food, there would always be some cholera infantum. Typhoid fever can be but slightly controlled by the Board of Health and none at all if physicians do not report it. Thus all the principal causes of deaths have been considered except diphtheria and croup, from which there have been fewer deaths than for several years.

While a board of health cannot directly and speedily influence the death rate, there is much that can be done indirectly that will be of great benefit.

The work that the Board of Health is doing in removing privy vaults and in doing away with poor plumbing may make no immediate effect upon the death rate, but it is certain that such work if persisted in, will influence the health of the city in future years. In the same way the abatement of nuisances, the enforcement of the milk laws and the inspection of provisions all affect the general health of the city. The work that the Board is doing now ought to have been done in the past and must not be postponed to the future.

The following list shows what is being done to furnish the essentials necessary to the sanitary welfare of the people:

I. Healthful habitations. The Board of Health has repeatedly recommended the adoption of Building ordinances.

II. Healthful occupations and workshops under control of the State.

III. Pure water, in charge of an able water board.

IV. Pure milk. Quality of milk has greatly improved since the Board of Health has had charge of inspection.

V. Pure foods. Board of Health inspection has nearly stopped sale of tainted meat. National inspection must prevent use of diseased animals for food.

VI. Prompt removal of human excrement. Board of Health requires good plumbing, removes poor vaults, and again and again, asks City Council for more sewers.

VII. Removal of other waste materials. Ashes and garbage are well managed by Health Department; garbage should be destroyed.

VIII. Proper treatment of conatgious diseases. Board of Health isolates and disinfects as well as can be done in private houses; Board annually recommends free contagious hospital. A disinfecting station is needed.

Even if all the foregoing essentials to longevity could be placed under the control of the Board of Health there would remain much work to be done in reforming the traits of some of our inhabitants and their indifference to filth and disease.

The following table will be of interest:

	Percentage of French-Canadian deaths to total deaths.	Percentage of French-Canadian deaths to total population.
1886	17.4	.37
1887	21.4	.57
1888	23.2	.56
1889	23.1	.58
1890	25.3	.63

Thus it is seen that the number of deaths among French-Canadians has steadily increased, both in proportion to the total number of deaths and to the population. In absence of statistics as to the number of French-Canadians in the city it cannot be said whether the table shows only an increased French-Canadian population, or also an unduly large death rate among people of that nationality.

FINANCIAL STATEMENT.

As has been pointed out by others the expenses of the Health Department have rapidly increased during the past five years. A detailed account of the expenditures is furnished each year in the auditor's report.

The Board of Health congratulates previous city governments upon their recognition of the financial needs of the Health Department. Money spent in guarding the sanitary interests of the city is always well spent.

The following is a list of the expenses for the past five years after deducting the expense of the Bath House in 1889 and 1890.

1886	$18,350.70
1887	22,375.21
1888	25,098.84
1889	30,051.45
1890	30,754,11

The increased expense of collecting ashes and swill follows rather the increase in territory than the increase in population. As explained in discussing the collection of ashes, an increase of twenty per cent. in the population means an increase of nearly forty per cent. in the cost of collecting ashes and swill. This includes keeping the dumps in better condition

than formerly. There are only two more horses used now than in 1887.

The great increase in the expenses however, has been in inspection and office work. When the present Board began its duties in 1888, it found a small inconvenient office with no opportunity for meetings, hearings, free vaccination, etc. The office was open only one and a half hours daily, and there was no telephone connection. Complaints had to be made in person during the brief time the office was open or else through the mail. Up to this time but little work had been done in the abatement of nuisances. Although the Board of 1887 was far more active than the Board of 1886, yet the present Board in 1888 abated five times as many nuisances as were abated in 1887, and *eleven* times as many nuisances as were abated in 1886. No attempt at the routine removal of vaults or the radical improvement of plumbing was really undertaken until 1888. Dumps and alleys were not kept as clean as at present. Swill was openly fed to cows and was carried through the city in improper receptacles. Nearly half the milk sold in the city was below standard. Physicians were not required to report membranous croup, measles, or typhoid fever. No houses were placarded, nor was routine disinfection done in cases of contagious disease. The occurrence of public funerals in contagious disease was not prevented. The inspection of provisions was then perfunctory. To a large extent all this order of things is changed. The law requiring Boards of Health to have oversight over the returns of death and to issue burial permits, compelled opening the office during business hours, and providing the Department with another clerk and with telephone connection.

The pressure of business forced a change into more commodious quarters.

Now physicians are required to report all varieties of contagious disease, houses are placarded, the cards remain up until contagion is no longer present and disinfection has been performed. Stricter rules for isolation are in force. Undertakers are required to promptly report every death from contagious disease, and an inspector is always present at the funeral to insure its privacy. Deaths are accurately recorded.

Plumbers are required to submit plans of proposed work, to use no cement pipe within the foundation walls, and to have their work stand a rigorous test. Old plumbing with leaky joints and poor traps is being done away with.

Through the exertions of the present Board of Health a law has been passed making it illegal to feed swill to cows. This is enforced by frequent inspection. Swill carts must be furnished with tightly covered boxes or barrels.

Milk has greatly improved in quality and is free from annotto. Provision markets are kept cleaner, and there is less tainted meat.

Privy vaults are being removed from the thickly settled parts of the city. Odorless excavator teams are more thoroughly inspected than formerly.

All these changes and more, have taken place during the last three years, but it has cost money in wages of inspectors to effect such improvements. The money has been wisely spent, and if the foregoing lines of action are persevered in there should be a gradual improvement in the health of the city.

While future Boards of Health may do less work than has been done in 1888, 1889 and 1890, no Board will dare to accomplish as little as was done prior to 1888.

The following extracts are taken from the forthcoming report of the auditor which will furnish a detailed list of expenditures:

Appropriation	$25,000,00
Loan	3,500.00
Receipts	3,166.00
	$31,666.00
Expenditures	$31,439.86
Transferred to other Departments	226 14
	$31,666.00

To tell exactly how this amount has been divided among the different branches of sanitary work is not easy. Men and teams employed at one time of the year collecting ashes, may at another season collect swill, and still later be working in the alleys. Men employed to do disinfection may at times do other work. The exigencies of the work are such that no hard and fast lines of work can be laid down.

Omitting the salaries of the Board which are fixed by the City Council, it might be said on a rough estimate that seventy-two per cent. of the expenses are incurred in the collection and disposal of ashes and swill, eighteen per cent. should be credited to the expenses of the office and inspection of plumbing, of vaults and of nuisances. The remaining ten per cent. ought to be divided among vaccination, disinfection after contagious disease, bath house, rent, urinal, etc.

If it should be desired to make a record for economy, instead of record of work done, it will now be an easy matter. An accurate inspection of all the privy vaults in the

city was made and recorded in 1890, and will obviate much inspection in 1891. The carts, harnesses and horses have gradually been brought to a good condition and it will not require much outlay to keep them so. It is a matter of congratulation that this work could be done when it was needed. Last of all, if the wise expenditures of the past three years will not leave enough room for economy, the payroll can be cut down. The minimum pay of the Health Department laborers is no higher than that of laborers in other departments of the city. The pay of inspectors is the same as persons of similar qualifications obtain elsewhere. Health department laborers work every weekday, no matter what the weather. The effect of ashes on the clothes is very bad. The inspectors are daily brought in contact with contagious disease which may be taken to their families. Taking all things into consideration, the wages of the Department employees could not well be reduced unless a similar cut-down was made in other departments.

RECOMMENDATIONS.

In making recommendations, the Board cannot do better than to quote from the report of 1889.

"To make recommendations is a perfunctory duty and a matter of doubtful utility. In common with other reports to the city council that of the Health Department is received and placed on file without reading. After a lapse of months the report is printed, and is read only by those interested in sanitary affairs. Members of the city government are often ignorant of the work performed by the Health Department, and imagine that the appropriation is wholly spent in the

inspection and abatement of nuisances, whereas nearly all of the money spent goes for the collection of ashes and swill. The Board is well aware that members of the City Council who freely give their time to the city without pay, and to the neglect of their own business, cannot be expected to be conversant with all departments of municipal activity. Nevertheless, if the Board could make only one recommendation it would RECOMMEND THAT THIS REPORT BE READ."

Should this advice be followed, several recommendations would be found in the body of the report. Among the most important recommendations are the following, most of which have been called to the attention of the City Council several times.

The Board of Health recommends:

That the City establish suitable Building laws;

That a large increased number of sewers be constructed each year, and that sewer construction be in charge of a more permanent committee or Board;

That the City establish a suitable hospital for the isolation of contagious diseases;

That all garbage be cremated, instead of being used as a food for animals.

CONCLUSION.

The Board of Health wishes to testify to the unanimity and harmony of action of its members during the past three years. The Board again records the pleasant relations existing between it and other departments of the City Government.

In closing this report, the Board must express its appreciation of the work which each additional year of service has made more valuable, and which has been so faithfully performed by the superintendent, foreman, and inspectors of the Health Department.

Respectfully submitted,

JAMES B. FIELD,
CHARLES R. COSTELLO,
J. ARTHUR GAGE,
Board of Health.

Schedule of Property Owned by the City of Lowell in Care of the Board of Health.

Fourteen Horses	$2,200 00
Eighteen single harnesses	400 00
One pair double harnesses	10 00
Ten horse covers	30 00
Ten surcingles	8 00
Fourteen blankets	28 00
Thirteen curry combs and brushes	10 00
Fourteen halters	10 00
Eight single carts	450 00
Five swill wagons	300 00
Eleven sleds	550 00
Four stake chains	1 40
Three wagons	400 00
One hospital wagon	50 00
One buggy	50 00
One pung	60 00
One sleigh	25 00
Three wolf robes	25 00
Three whips	75
Stable and sheds	1275 00
Smallpox hospital and furniture	500 00
Bath house and fixtures	2600 00
Swill house	75 00
Two public urinals	700 00
Two stoves	35 00
One copper tank	6 00
One hundred feet rubber hose	10 00
Fourteen shovels	14 00
Twelve ice cutters	14 00
Three hoes and rakes	1 50
One saw	1 00
One hammer	1 00
Amount carried forward	$9,840 65

Amount brought forward	$9,840 65
One screwdriver	15
One carriage jack	1 00
Two monkey wrenches	1 50
One hay cutter	7 00
Two feed boxes	10 00
Two stable pails	1 50
Three hay forks	50
One dung fork	1 00
Stable truck	9 00
Office furniture	257 00
Books	30 00
Two ice tanks	12 00
Six brooms	1 50
One window brush	40
Five nickel badges	7 00
One step ladder	2 00
Twelve tons of hay	216 00
One hundred and fifty bushels oats	90 00
Two gas stoves and kettle	5 00
	$10,493 20

MEMBERS OF THE BOARD OF HEALTH.

YEAR.	CHAIRMAN.	OTHER APPOINTED MEMBER.	CITY PHYSICIANS, EX-OFFICIO.	AGENT AND SUP'T. OF HEALTH DEPARTMENT.
1878.....	J. W. B. Shaw.....	Michael Hoar.....	L. Huntress, Jr., M. D.	
1879.....	J. W. B. Shaw.....	Michael Hoar.....	E. W. Trueworthy, M. D.	
1880.....	J. W. B. Shaw.....	Michael Hoar.....	E. W. Trueworthy, M.D.	
1881.....	J. W. B. Shaw.....	Nathan Allen, M. D....	E. W. Trueworthy, M.D.	
1882.....	J. W. B. Shaw.....	Nathan Allen, M. D. ..	W. G. Eaton, Jr., M. D.	Frederick A. Bates.
1883.....	J. W. B. Shaw.....	Wm. M. Hoar, M. D...	W. G. Eaton, Jr., M. D.	Frederick A. Bates.
1884.....	Wm. M. Hoar, M D.....	James J. McCarty, M. D.	W. G. Eaton, Jr., M. D.	Frederick A. Bates.
1885.....	J. W. B. Shaw.....	James J. McCarty, M. D.	John J. Colton, M. D...	Frederick A. Bates.
1886.....	J. W. B. Shaw.....	Nathan Allen, M. D....	John J. Colton, M. D...	Frederick A. Bates.
1887.....	Nathan Allen, M. D....	Charles R. Costello....	John J. Colton, M. D...	Frederick A. Bates.
1888.....	James B. Field, M. D..	Charles R. Costello....	J. Arthur Gage, M. D...	Frederick A. Bates.
1889.....	James B. Field, M. D..	Charles R. Costello....	J. Arthur Gage, M. D..	Frederick A. Bates.
1890.....	James B. Field, M. D..	Charles R. Costello....	J. Arthur Gage, M. D..	H. H. Knapp, Ag't.
1891.....	Charles R. Costello....	James B. Field, M. D...	Wm. P. Lawler, M. D..	F. A. Bates, Sup't.

ANNUAL REPORT

OF THE

Superintendent of Streets,

OF THE

CITY OF LOWELL

FOR THE YEAR 1890.



LOWELL, MASS.:
MORNING MAIL PRINT, 147 CENTRAL STREET,
1891.

CITY OF LOWELL.

IN BOARD OF ALDERMEN, FEBRUARY 25, 1891.

Received and ordered on file; sent down for concurrence.

MICHAEL J. DOWD,

City Clerk.

IN COMMON COUNCIL, APRIL 14, 1891.

Received and ordered on file, in concurrence.

DAVID CHASE,

Clerk.

REPORT.

To the Honorable the Mayor and City Council of the City of Lowell:

In accordance with the requirements of the City Ordinances, I hereby most respectfully submit the following report of the departments under my charge, viz.: Roads and Bridges, and Sewers and Drains, for the year 1890.

ROADS AND BRIDGES.

GENERAL STATEMENT OF RECEIPTS AND EXPENDITURES.

Receipts.

Appropriation	$70,000 00
Loans (including $25,000.00 for paving)	32,500 00
Receipts from various sources	22,241 57
Transfers	561 02
Total receipts	$125,302 59

Expenditures.

Total expenditures	$125,302 59	
Less receipts from various sources	22,241 57	
		$103,061 02
Less expense of granite block paving		24,344 26
Total net expenses for ordinary street purposes		$78,716 76

STREETS LAID OUT AND ACCEPTED IN 1890.

STREETS.	BETWEEN WHAT STREETS.	LENGTH IN FEET.
A	South Walker and Wilder	572.2
Aiken Avenue	River and Cumberland Road	1,282.0
Bellevue	Westford and Thayer	951.0
Cheever	End of accepted part to Pawtucket	531.1
Dalton	Aiken Avenue and Exeter	315.8
Edson	Westford and Princeton	383.0
Exeter	Conduit Avenue and Dalton	550.5
Gates	Sheldon and Thayer	152.7
Leverett	Washington southerly	636.6
Nichols	Westford southerly	252.3
Nicollette	Stevens and Harvard	463.8
Thayer	Gates and Barclay	385.0
West Ninth	Bridge and Hampshire	453.0
Total		6,929.0

Number of miles of accepted streets January 1, 1890..... $104\frac{44}{100}$
Number of miles of streets accepted in 1890..... $1\frac{31}{100}$

Number of miles of accepted streets January 1, 1891..... $105\frac{75}{100}$

The grade of the sidewalk on the northerly side of Middlesex Street, between South Street and Robeson Street, has been re-established.

That portion of Pawtucket Boulevard which was laid out 60 feet in width, has been reduced to 50 feet in width by discontinuing 10 feet on the southerly side.

The grade of a portion of Grand Street, from Chelmsford Street southerly, has been changed.

The grade of a portion of Belmont Avenue, from Fairview Street southerly, has been changed.

Tne westerly line of Lawrence Street has been changed at the curve just south of Randolph Street.

The names of River Street, from Bridge Street to Hamblett Street, and Hamblett Street, from River Street to the city line, have been changed to Lakeview Avenue.

STREETS GRADED.

STREETS.	STREETS.
Andover.	Davidson.
Arch.	Edson.
B.	Eighteenth.
Bartlett.	Fairmount.
Beacon.	Fayette.
Belmont Avenue.	Fort Hill Avenue.
Billings.	Foster.
Boylston.	Fulton.
Cabot.	Grand.
Canton.	Gold.
Centre.	Hanks.
Chester.	Harvard.
Chestnut.	Highland.
Cheever.	Howe.
Concord.	Hutchinson.
Congress.	John.

STREETS GRADED — CONTINUED.

STREETS.	STREETS.
June.	Robinson.
Laurel.	Rock.
Lawrence.	Rogers.
Liberty.	School.
Lincoln.	Seventh Avenue.
Loring.	Seventh.
Lundberg.	Sherman.
Main.	South.
Mammoth Road.	South Wilder.
Marlborough.	Stanley.
Middlesex.	Stevens.
Moore.	Suffolk.
Myrtle.	Third Avenue.
Nesmith.	Thorndike.
Nichols.	Twelfth.
Oliver.	Westford.
Paige.	West Sixth.
Parker.	White.
Pine.	Whitney Avenue.
Pollard.	Woodward Avenue.
Powell.	Wyman.
Richards.	

MACADAMIZING.

STREETS.	BETWEEN WHAT STREETS.	SQUARE YARDS.
Lawrence	At Lowell Cemetery	2,666
Seventh	Bridge and Methuen	1,566
Suffolk	Broadway and Market	3,175
Total		7,407

COBBLE STONE GUTTER PAVING.

STREETS.	SQUARE FEET.
Eighteenth	1,525
Fairmount	4,250
Fairview	1,750
Hildreth	2,380
Myrtle	13,130
Rolfe	1,696
Tilden	1,600
Whitney Avenue	795
Wyman	1,155
Total	28,281 square feet, or 3,142⅓ square yards.

GRANITE PAVING.

STREETS.	BETWEEN WHAT STREETS.	SQUARE YARDS.
Bridge..	End of pavement laid 1889, to 13th Street.	936.0
Fletcher.	Broadway and Cushing.....	3,290.3
George .	Church and Tyler.....	596.8
Hale....	Thorndike and Howard.....	3,017.9
Jackson.	Central and Robeson.....	3,926.7
Palmer .	Merrimack and Middle	657.3
Total.	.....	12,425.0

CONCRETE PAVING, REPAIRED.

Have top dressing on Pawtucket Street, 532 square yards.

SIDEWALKS.

STREETS.	BETWEEN WHAT STREETS.	LIN. FT. COR. STONE.	LIN. FT. EDGE-STONE.	SQ. YDS. CON-CRETE.
Andrews ..	East side, Agawam and Moore			796.3
B	North side, Powell and So. Walker.....	37.9	1,014.4	
Cheever...	East side, Cabot and Tucker,	55.5	566.9	
Congress & Robinson	North and west side, Thorndike and Robinson; north side, Congress and passageway.....	28.4	739.8	
	Carried forward.....	121.8	2,321.1	796.3

SIDEWALKS — CONTINUED.

STREETS.	BETWEEN WHAT STREETS.	LIN. FT. COR. STONE.	LIN. FT. EDGE-STONE.	SQ. YDS. CON-CRETE.
	Brought forward.....	121.8	2,321.1	796.3
Crosby....	Both sides, Central and lane of Wamesit Power Co.			1,060 1
Decatur...	South side, in front of premises of P. Vigeant and J. Saunders.....	9.4	116.2	34.0
Eighteenth	Both sides, Bridge and Beacon.....	56.6	1,770.9	
Fairmount.	West side, in front of premises of T. Carolin and F. J. Ladd.....		201.2	149.6
Fletcher ..	West side, Rock and Franklin.....	5.3	312.8	
Foster	West side, Pine and north line of premises of B. G. Brown.....	9.2	892.8	647.4
Fulton	Both sides, River and West,	16.8	187.6	586.6
Gold.....	Both sides, School and end of street.....	17.1	460.7	282.7
*Gorham ..	East side, L. & A. R. R. southerly.....		899.0	
Grand	West side, in front of premises of Advent Christian Church.....			43.1
*Grand ...	East side, Hale and Chelmsford.....	9.2	473.4	
Grand	West side, in front of State Amory.....		214.8	139.2
Hale.....	North side, Thorndike and Howard; south side, Thorndike and R. R. Bridge.....	20.2	1,347.3	
	Carried forward.....	265.6	9,197.8	3,739.0

SIDEWALKS — CONTINUED.

STREETS.	BETWEEN WHAT STREETS.	LIN. FT. COR. STONE.	LIN. FT. EDGE-STONE.	SQ. YDS. CON-CRETE.
	Brought forward.....	265.6	9,197 8	3,739.0
Huntingt'n	East side, in front of premises of Charles H. Conant,			51.5
Jefferson ..	North side, Lewis and angle in street.....	4.8	13.7	57.5
June.....	Both sides, Twelfth and north line of premises of J. C. Martel.....	52.7	1,426.4	
Lawrence .	East side, Wamesit Canal and Concord River; west side, Agawam and Moore,	72.6	3,441.2	
Mammoth Road,	West side, Varnum Ave. and Woodward Ave....	45.9	939.2	
Mammoth Road,	East side, north line of School House lot and Seventh Ave.....	10.3	803.4	
Middlesex .	South side, in front of premises of Grenville S. Hovey		123.3	98.2
Middlesex .	South side, in front of premises of Frank E. Putnam,	9.5	93.6	
Merrill....	East side, in front of premises of estate of J. M. G. Parker.....	10.4	69.3	
* Nesmith .	West side, in front of premises of W. S. Lamson....		91.5	
Nichols ...	West side, Westford and end of street.....	9.2	247.7	154.0
Palmer ...	Both sides, Middle and Market			182.4
*Palmer ..	Both sides, Merrimack and Middle.....	76.2	277.4	
	Carried forward.....	557.2	16,724.5	4,282.6

SIDEWALKS — CONTINUED.

STREETS.	BETWEEN WHAT STREETS.	LIN. FT. COR. STONE.	LIN. FT. EDGE-STONE.	SQ. YDS. CONCRETE.
	Brought forward.....	557.2	16,724.5	4,282.6
Pine.....	North side, Westford and east line of premises of Mrs. Valentine Wilson..	20.8	680.9	420.9
School	West side, Liberty and Mason	28.6	660.4	
*Sherman .	North side, Huntington and Nesmith	19.4	345.9	75.0
Sherman ..	South side, in front of premises of N. W. Norcross		74.5	48.6
Stanley ...	Both sides, River and West	28.4	1,508.0	
Suffolk ...	East side, Broadway and Adams.....		983.2	600.7
Talbot	North side, in front of premises of Mrs. A. E. Nichols.....		68.8	53.1
West Sixth	North side, Jewett and West			443.0
Whitney Ave.	West and South side, Eigthteenth and Beacon.	9.4	994.4	
Wilder ...	West side, Pine and south line of premises of A. Bibeault	9.7	800.7	277.8
	Concrete relaid and patching done on sundry streets			1,201.7
Total	laid in 1890.....	673 5	22,841.3	7,403.4

NOTE.— Edge-stone laid on Jackson Street, and various other places, 908.7 feet, making a total of 23,750.0 linear feet.

*Unfinished.

CONCRETE SIDEWALKS REPAIRED.

STREETS.	BETWEEN WHAT STREETS.	SQUARE YARDS.
Appleton	North side near Thorndike	8.7
Branch	South side, near Loring	18.8
Bridge	West side, in front of premise Nos. 178, 180, 182	24.5
Bridge	Both sides, near Central Bridge	58.2
Broadway	North side, near Fletcher	16.5
Broadway	North side, near School	11.7
Church	North side, in front of premises No. 45	14.5
Church	South side, in front of premises No. 65	39.1
Dover	Both sides, Branch and Grove	73.5
Durant	West side, Richardson, southerly	84.0
East Merrimack	North side, in front of premises Nos. 136 and 138	28.9
Fairmount	East side, Talbot and Fairview	15.3
Fort Hill Ave.	East side, in front of premises of Mrs. Smith	70.6
Harrison	West side, Andover and Oak	24.0
Howard	West side, near Middlesex (hard)	16.2
Jefferson	North side, Lewis and angle in street	43.4
Mansur	North side, Nesmith and Fairmount	30.3
Middle	Both sides, near Palmer	50.9
Middlesex	South side, Howard and Grand	3.8
Mt. Washington	East side, near Pawtucket	43.3
Middle	South side, in front of premises of H. R. Barker Company	37.6
Moore	North side, near Andrews	37.9
Myrtle	East side, new premises, No. 69	31.4
	Carried forward	783.1

CONCRETE SIDEWALKS REPAIRED — CONTINUED.

STREETS.	BETWEEN WHAT STREETS.	SQUARE YARDS.
	Brought forward	783.1
Oak	South side, in front of premises of Mrs. Smith	12.6
Oak	South side, in front of premises of C. Pindar	21.7
Riverside	North side, at premises of Mrs. J. P. White	63.7
Rogers	South side, in front of premises of estate of J. M. G. Parker	75.6
School	East side, near Broadway	28.7
School	East side, near Pawtucket Bridge	7.4
Suffolk	South side, near Broadway	1.8
Third	North side, Fremont and Vernon	34.3
West Fifth	South side, near Bridge	31.2
Westford	South side, in front of State Armory	107.6
Westford	North side, Dover and Walker	33.3
Westford	South side, near Nichols	0.7
Total		1,201.7

WALKS TOP DRESSED.

STREETS.	BETWEEN WHAT STREETS.	SQUARE YARDS.
Appleton	South side, Central and Gorham	41.1
Belmont	Both sides, Westford and Pine	175.9
Branch	South side, Loring and Coral	93.2
Bridge	West side, West Sixth and Bridge	252.5
Bridge	West side, in front of premises Nos. 178, 180 and 182	77.3
Bridge	Both sides, near Central Bridge	85.5
Broadway	North side, near Dutton	62.2
Broadway	North side, near Fletcher	49.6
Broadway	North side, near School	23.3
Broadway	North side, in front of yard of Lowell Water Works (hard)	8.6
Broadway	North side, Adams and Fletcher	156.4
Church	Both sides, Warren and George	180.8
Columbus Ave.	North side, in front of premises No. 3	24.6
Concord	East side, in front of premises Nos. 52 and 54	44.2
Dover	East side, Grove and Middlesex	128.7
Dover	Both sides, near Westford	80.5
Durant	West side, Richardson, southerly	242.6
Dutton	West side, near Broadway	58.2
East Merrimack.	North side, in front of premises Nos. 136 and 138	56.3
Fletcher	East side, Broadway and Cross	30.0
Jackson	South side, in front of Hamilton coal-house	42.0
Loring	Both sides, near Branch	110.0
	Carried forward	2,023.5

WALKS TOP DRESSED — CONTINUED.

STREETS.	BETWEEN WHAT STREETS.	SQUARE YARDS.
	Brought forward.....	2,023.5
Mansur.....	North side, Nesmith and Fairmount.....	26.2
Middlesex	South side, in front of premises of Samuel Renaud	13.6
Middlesex	South side, near Elliott.....	118.3
Middlesex	South side, in front of premises of Murphy and Bingham (hard)	19.0
Middlesex	South side, Howard and Grand.....	70.2
Middlesex	North side, Middlesex Place and Middlesex Place	374.3
Moore.....	North side, near Andrews.....	75.8
Mt. Washington	West side, near Pawtucket.....	127.6
Myrtle.....	East side, in front of premises No. 69	74.2
Oak.....	South side, near Fort Hill Avenue.....	16.3
Pleasant.....	West side, in front of premises Nos. 41, 43	34.2
School	East side, near Broadway.....	52.3
School	East side, near Bowers	53.4
School	East side, near Westford.....	26.2
South	West side, Middlesex and Appleton.....	36.2
Third	North side, Fremont and Vernon	60.0
Thirteenth.....	North side, in front of premises of F. W. Puffer.....	214.5
Walker	West side, near Westford.....	77.0
West Fifth.....	South side, near Bridge.....	38.3
Westford.....	South side, School and Lane	46.0
Total.....	....	3,577.1

CONCRETE CROSSINGS.

STREETS.	LOCATION.	SQUARE YARDS.
Highland	At the South Common	34.1
Lane	At Horn Street	35.6
Lane	At Liberty Street	37.3
Liberty	At Lane Street (2)	73.1
Liberty	At Hastings Street (3)	83.1
Liberty	At Warwick Street	32.8
Middlesex	At Wilder Street (3)	72.2
Middlesex	At Number 437	35.5
Smith	At Horn Street	31.1
Total		434.8

GRANITE CROSSINGS LAID.

STREETS.	LOCATION.
Across Andover	At Park Street (relaid).
" Barrington	At Andrews Street.
" Bowers	At Mt. Washington Street.
" Broadway	At Walker Street.
" Chapel	At Central Street.
" Chestnut	At Willow Street (relaid).
" City Hall Avenue	At Palmer Street (2).
" Concord	At Sherman Street.
" Entrance City Yard	At Broadway.
" Griffin	At Andrews Street.
" Hanks	At Sherman Street.

GRANITE CROSSINGS LAID — Continued.

STREETS.	LOCATION.
Across High	At Porter Street.
" Lawrence	At Moore Street.
" Mansur	At Fairmount Street.
" Mt. Washington	At Bowers Street.
" Nesmith	At Mansur Street (relaid).
" Palmer	At Merrimack Street.
" Palmer	At Middle Street.
" Seventh Avenue	At Mammoth Road.
" Sherman	At Concord Street.
" Wachusett	At Twelfth Street.
" Westford	At Pine Street.
" Westford	At Royal Street.
" Westford	At School Street.
" Willow	At Chestnut Street (relaid).

GRANITE BLOCK PAVING.

Loan		$25,000 00
EXPENDITURES.		
For labor, as per pay rolls	$4,486 26	
teaming	1,427 00	
paving blocks	18,364 87	
sundries	66 13	
		24,344 26
Balance		$655 74

Note.—There are in stock 16,628 paving blocks. The expense of same being included in above mentioned figures.

PALMER STREET.

FINANCIAL STATEMENT.

Balance on hand January 1, 1890	$7,011 95
Expended during year	21,712 86
Appropriation overdrawn	$14,700 91

EXTENSION OF PALMER STREET.

FINANCIAL STATEMENT.

Balance on hand January 1, 1890	$75,000 00
Receipts from various sources	335 15
Total receipts	$75,335 15
Expenditures	3,010 48
Balance on hand December 31, 1890	$72,324 67

PERSONAL PROPERTY.

The following is a schedule of Personal Property under my charge December 31, 1890, belonging to the Department of Roads and Bridges.

1 engine and tools (at crusher)	$500 00	*Brought forward*	$2,250 00
1 stone crusher	650 00	1 iron road roller	75 00
1 blacksmith shop and tools (at ledge)	150 00	1 stone road roller	125 00
1 crusher building	300 00	1 15-ton steam road roller	4,000 00
Stock and tools in repair shop (at yard)	500 00	2 street sweepers	200 00
Stock and tools in harness shop (at yard)	150 00	1 sprinkling cart	100 00
		1 road builder	150 00
		1 committee wagon (with runners)	200 00
Carried forward	$2,250 00	*Carried forward*	$7,100 00

PERSONAL PROPERTY— CONTINUED.

Brought forward ...	$7,100 00	*Brought forward*...	$20,903 00
2 lumber wagons....	175 00	1 small platform scales	5 00
4 wood wagons	200 00	1 row boat.....	10 00
1 truck wagon	50 00	16,628 paving blocks.	731 63
16 double carts.....	1,440 00	1,737 feet edgestone.	503 73
11 single carts.....	440 00	133 feet circle stone.	77 14
6 driving wagons....	350 00	625 feet flagging....	231 25
1 hand cart.....	10 00	48 stone bounds.....	48 00
2 stone trucks	150 00	1 ton egg coal	6 50
2 new cart bodies ...	40 00	1 bbl. cylinder oil....	23 50
17 double sleds	765 00	1 bbl. machinery oil..	8 00
2 single sleds.....	60 00	1 box bar soap.....	5 00
4 driving sleighs.....	110 00	½ bbl. axle grease....	8 00
2 new sled bodies....	30 00	5 bags meal	6 00
2 snow plows	20 00	40 bushels corn.....	28 00
9 snow scrapers.....	45 00	50 bushels oats.....	29 00
43 horses.....	8,095 00	40 gals. electric oil ..	3 60
19 set double harness.	850 00	35 tons hay	630 00
16 single harnesses...	320 00	½ ton straw..... ..	10 00
56 horse collars.....	112 00	23 feed baskets.....	11 50
44 halters	44 00	2 blanket chests.....	10 00
86 blankets.....	193 50	52 curry combs, brushes and cards..	31 20
30 surcingles	9 00	3 hay cutters.....	18 00
1 horse sling.....	4 00	25 lbs. Forcite powder.....	8 50
2 horse covers.....	5 00	15 lbs. blasting powder.....	1 80
6 heavy robes.....	65 00	18 lanterns.....	4 50
6 lap robes.....	15 00	36 lantern globes....	2 10
1 carriage boot.....	1 50		
2 fly nets	4 00		
1 large platform scales	200 00		
Carried forward..	$20,903 00	*Carried forward*..	$23,354 95

PERSONAL PROPERTY— CONTINUED.

Brought forward...	$23,354 95	*Brought forward*...	$23,931 00
2 stone drags.....	10 00	2 adzes	2 00
2 plows.....	10 00	1 scythe.....	1 50
10 wheelbarrows .. .	40 00	8 heavy chains.....	16 00
2 derricks.....	100 00	4 set tackle and falls	48 00
5 stoves.....	50 00	5 long-handled shovels	2 50
6 office chairs.....	10 00	2 steel frost wedges..	1 50
1 office desk.....	5 00	3 trowels.....	1 50
1 coal hod.....	75	10 paving mauls	30 00
195 street signs	58 50	107 picks.....	85 60
1 fifty-foot extension ladder.....	10 00	1 feather duster.....	1 50
		3 office brooms.....	90
2 fifty-foot tape measures	2 00	1 heavy tub	1 00
		1 monkey wrench ...	50
12 tool chests.....	48 00	6 drilling spoons.....	1 50
70 stake chains	14 00	222 foot steel drills..	107 90
50 bundles broom stuff	3 00	5 oil cans	2 50
2 electric batteries ..	40 00	3 horse pails.....	75
5 spirit levels.....	10 00	7 iron pails.....	3 50
4 clocks.....	8 00	1 ice chisel.....	50
20 street rakes.....	5 00	78 stone-cutting points and drills	23 40
8 hay forks.....	4 00		
3 manure forks.....	3 00	55 hoes	16 50
37 crowbars	37 00	3 hand saws.....	2 25
120 snow shovels....	60 00	2 cross cut saws.....	2 50
106 shovels.....	53 00	1 hatchet	50
8 axes.....	4 80	38 hammers.....	76 00
Carried forward..	$23,931 00	Total.....	$24.371 30

SEWERS AND DRAINS.

Appropriation	$20,000 00
Receipts from various sources	11.202 50
	$31.202 50
Expenditures	26,801 55
Balance	$4,400 95
Transferred to other appropriations	4,400 95

IMPROVEMENT OF ANDOVER STREET SEWERAGE.

Amount transferred from appropriation of sewers and drains	$3,375 05
Expenditures	3,375 05

TABLE SHOWING THE SEWERS BUILT DURING THE YEAR 1890.

STREETS.	SIZE AND LENGTH. 18 in.	15 in.	12 in.	10 in.	MATERIAL.	Average Depth.	Cubic Yards Ledge.	Man Holes.	BEGUN.	FINISHED.	COST.	Total Length.
*Andover Street Extension 30 in	.....	.....	.....	.....	Brick and iron	14.5	5.3	2	Nov 11....	Unfinished ..	$1,415.78	185.0
Blossom	.....	.....	464.4	.....	Globe pipe..	11.1	.....	3	Nov. 10....	Nov. 22.....	465.00	464.4
Bridge Street, Outlet 30 in	.....	.....	.....	.....	Iron pipe	.....	.....	1	Aug. 10....	Unfinished ..	405.80	....
Chester	.....	.....	155.0	.....	Akron pipe.....	9.2	14.3	1	Sept. 25....	Oct. 9...	171.40	155.0
Central	.....	.....	95.0	.....	Globe pipe.....	16.0	.....	....	June 5. ...	June 14.....	239.06	95.0
†Dalton	.....	.....	410.0	.....	Portland pipe.....	9.0	15.0	2	May 15.....	June 20	499.98	410.0
Decatur	.....	.....	.....	175.6	Portland pipe.....	9.8	49 3	2	Aug. 4.....	Sept. 12.....	468.66	175.6
Dutton, Kitson and Worthen	254.2	524.2	258.4	.....	Portland pipe.....	12.5	180.9	6	Sept. 4.....	Oct. 31	2,629.47	1,036.8
*Fayette	.....	604.0	.....	.....	Akron pipe.....	13.2	.....	4	Oct. 23....	Unfinished ..	706.12	467.0
Haseltine	.....	.....	220.0	.....	Akron pipe.....	9.6	.....	1	June 19....	June 30.....	198.75	220.0
Harding and Warwick	.....	.....	816.5	.....	Akron pipe.....	9.7	321.6	4	June 23....	Aug 30.....	2,357.04	816.5
*June	.....	.....	365.0	.....	Globe pipe.....	9.3	.....	2	Dec. 10....	Unfinished ..	52.54	65.0
Lincoln	.....	.....	446.0	.....	Portland pipe.....	11.3	.....	2	Sept. 23....	Oct. 1.....	480.72	446.0
Moody	.....	294.0	.....	.....	Globe pipe.....	15.0	.....	1	Oct. 16....	Nov. 15.....	1,502.62	294.0
Myrtle Street, Outlet 30 in	.....	.....	.....	.....	Iron pipe and brick.	.....	.....	1	Aug. 17....	Dec. 9.....	1,234 64	231.3
Marlborough	.....	.....	244.6	.....	Portland pipe.....	10.0	21.6	2	Aug. 4.....	Aug. 19.....	370.25	244 6
New School	.....	.....	226.5	.....	Portland pipe.....	12.0	.....	1	Aug. 20....	Sept. 4.....	270.69	226.5
Pawtucketville. Outlet 75 x 54 in.	.....	.....	.....	.....	Stone and wood.....	.....	42.0	....	July 22	Sept. 12.....	425.15	40.0
Sheldon and Royal	.....	312.0	502.0	.....	Portland pipe.....	9.3	395.4	6	June 23....	Sept. 2.....	2,752.71	814.0

Lineal feet of sewers laid in 1890.....6,386.70 or 1.21 miles.
Laid previously..... 54.57 miles.

Length of sewers January 1, 1891..... 55.78 miles.

*Under contract but not completed.

†Built by Thomas Nesmith and accepted by the City at a cost of $213.46.

STREET CATCH BASINS BUILT DURING THE YEAR 1890.

STREETS.	LOCATION.
Central (cesspool)...	West side, 216 ft. south of Market St.
Chelmsford.....	South side, 13 ft. east of Daly St.
City Hall Aveuue...	Centre of Avenue, 179 ft. east of City Hall.
City Hall Avenue...	Centre of Avenue, 383½ ft. east of City Hall.
City Hall Avenue...	Centre of Avenue, 561½ ft. east of City Hall.
City Hall Avenue...	Centre of Avenue, 670 ft. east of City Hall.
Lawrence (cesspool).	East side, 431 ft. north of Moore St.
Lincoln (cesspool)...	West side, 18 ft. south of Lincoln St. bridge.
Lincoln (cesspool)...	West side, 18½ ft. north of Lincoln St. bridge.
Lincoln (cesspool)...	East side, 20 ft. south of Lincoln St. bridge.
Lincoln (cesspool)...	East side, 18½ ft. north of Lincoln St. bridge.
Lincoln (cesspool)...	East side, 172 ft. north of Lincoln St. bridge.
Merrimack.....	South side, 16 ft. west of Palmer St.
Palmer.....	East side, 80 ft. south of Middle St.
Stanley.....	West side, 116 ft. north of Stanley Avenue.
Stanley.....	East side, 69 ft. north of Stanley Avenue.
Suffolk.....	South side, 308 ft. east of Adams St.
Suffolk.....	South side, 10 ft. west of east line Lagrange St.
Worthen.....	North side, 3 ft. west of Kitson St.
White.....	East side, 8½ ft. north of Second Avenue.
White.....	West side, 17½ ft. north of Third Avenue.
White.....	South side, at angle.

PERSONAL PROPERTY.

The following is a schedule of Personal Property under my charge December 31, 1890, belonging to the Department of Sewers and Drains:

1 Hoadley engine....	$400 00	*Brought forward*...	$3,760 80
1 Webb-Watson eng.	1,000 00	2 carts.....	100 00
2 steam derricks and riggings.....	300 00	2 sleds	80 00
1 boiler.....	100 00	2 single harnesses....	50 00
3 submerged pumps..	300 00	42 catch basin steps..	5 64
2 pile drivers	150 00	7 catch basin dippers.	14 00
1 pile driver frame...	25 00	1 portable kettle.....	5 00
2 steam drills.....	500 00	1 50-ft. tape measure.	1 50
2 blacksmith shops and tools.....	50 00	5 set shear poles.....	25 00
2 electric batteries ..	40 00	2 crabs	50 00
250 feet hydrant hose	50 00	5 set tackle and falls.	60 00
4 sets edgestone castings	59 60	2 hoisting tubs.....	30 00
2 16-in Clapp grates.	5 60	2 oil cans	1 50
8 18-in. Clapp grates.	25 60	3 hoes.....	75
14 20-in. Clapp grates.	56 00	4 lanterns	1 00
13 Clapp's traps.....	39 00	76 picks	60 80
2 marine pumps.....	40 00	21 plug drills and points.....	6 30
36 feet marine pumps	54 00	1 hand saw.....	75
2 rubber diaphragms.	4 00	1 cross cut saw.....	1 25
2 hydrant chucks....	12 00	2 hand hammers.....	1 00
2 horses.....	500 00	1 nail hammer	50
1 Concord wagon....	50 00	2 brick hammers	1 00
		20 heavy hammers ..	40 00
Carried forward....	$3,760 80	*Carried forward*....	$4,296 29

PERSONAL PROPERTY—CONTINUED.

Brought forward...	$4,296 29	*Brought forward*....	$4,697 89
70 shovels.....	35 00	5 grapples.....	5 00
2 trowels	1 00	15 calking irons... .	7 50
1 adze.....	1 00	3 pair rubber boots..	6 00
3 hatchets.....	1 80	5 drilling guns.....	2 50
9 crowbars	9 00	1 timber grapple	1 50
3 monkey wrenches..	1 50	10 iron pails.....	5 00
11 jack screws.....	22 00	6 wooden pails.....	1 50
9 water gate wrenches	9 00	16 wheelbarrows....	32 00
7 spanners	3 50	14 wooden mauls....	17 50
1 steel square.....	75	1 pair stone dogs....	2 00
10 tool chests	40 00	1 long handled shovel	75
1 spirit level.....	2 00	2 scoops.....	1 50
393 ft. steel drills....	191 55	1 sand screen.....	1 50
14 drilling spoons...	3 50	4 dualin heaters....	12 00
8 tag ropes.....	4 00	4 100 lb. iron mauls..	10 00
26 heavy chains.....	52 00	2 tamping bars.....	1 00
12 sheeting caps.....	24 00	1 powder can.... ..	25
Carried forward....	$4,697 89	1 bbl. cement.....	1 25
			$4,806 64

PAWTUCKET BOULEVARD.

RECEIPTS.

Balance on hand January 1, 1890.....	$7,634 38
Appropriation.....	18,000 00
Receipts	1 75
Total receipts.....	$25,636 13

EXPENDITURES.

To George L. Goodale, for land..	$1,350 00		
E. S. Howe, for land.....	657 00		
T. J. Underwood, for land....	554 00		
		2,561 00	
labor, as per pay rolls.....		9,349 70	
tools, trees, teaming, etc.....		13,653 14	
Total expenditures.....			$25,563 84
Balance on hand December 31, 1890.....			$72 29

PERSONAL PROPERTY.

The following is a schedule of Personal Property under my charge December 31, 1890, belonging to the appropriation for Pawtucket Boulevard:

2 one-horse scrapers..	$50 00	*Brought forward*....	$113 25
1 plough.....	6 00	26 picks.....	20 80
1 tool chest.....	4 00	4 iron pails.....	2 00
1 scythe.....	1 50	6 wooden pails	1 50
1 sickle.....	25	5 crowbars.....	5 00
1 draft chain.....	2 00	8 stone rakes.....	2 00
8 wheelbarrows.....	10 00	16 street rakes.....	8 00
3 axes.....	2 25	18 hoes.....	9 00
1 hand saw.....	75	2 hammers.....	4 00
73 shovels.....	36 50		
			$165 55
Carried forward....	$113 25		

REMARKS.

In my report of last year, I made certain recommendations which I believed to be in the line of improvement and economy.

One change, at least, has been made in the Ordinances during the year — namely, the method of granting sewer permits — which has already shown itself to be a good thing for the City, and also a great convenience to the public, and in the revision of the City Ordinances (which is to take place during the year 1891) still further desirable changes can be effected.

LAYING OUT NEW STREETS.

It has become a general custom in laying out new streets, simply to put on record the survey of the street line and the establishment of the grade, leaving as a legacy to some future City Government the work of grading and making other necessary improvements, not usually made until such time as the abuttors call for edgestones, and then in many instances it is found that the buildings have been built without regard to the grade of the street, and the City in grading the street and setting the edgestones is called upon to expend large amounts of money in putting the abuttors' property in good and safe condition.

BRIDGES.

A considerable amount of money has been expended during the year in replanking the following

bridges, viz.: Aiken Street, Central Street, East Merrimack Street, Lawrence Street (at Cemetery), Moody and Dutton Streets, and in finishing the new bridge across River Meadow Brook at Lincoln Street.

CLEANING OF PAVED STREETS.

It will be necessary early in the season to purchase at least one new street sweeper, as those now in use are worn out and unfit for service. As the number of paved streets have been increasing each year it will very soon become necessary for the City to enlarge upon this branch of the work in order to keep the sanitary condition of the streets satisfactory.

MACADAMIZING.

In this connection I desire to suggest that a due regard for economy and permanency of work, demands that all gas, water and sewer pipes in any streets to be macadamized be put in good condition before any work is commenced. In the repeated opening of macadamized streets for the purpose of laying pipes proper care has not been taken in replacing the macadam and it has become badly mixed with earth, which in many cases spoils the evenness of the surface. In my opinion only such persons as are licensed by the Board of Aldermen should be allowed to open a public street.

GRANITE BLOCK PAVING.

Twenty-five thousand dollars have been expended in paving during the year, and in my judgment there is no way in which money appropriated for street work is more economically expended, as the stone used in macadamizing is of a very poor quality, and the gravel used in repairing streets is not only unsatisfactory, but expensive, owing to the distance of the "pit" from the centre of the city.

SIDEWALKS.

The contract for furnishing edgestone was awarded to William Reed; the quality furnished was on the whole satisfactory, but there was much delay during a portion of the season in forwarding the stone on account of labor troubles at the quarry. Although there have been as many edgestones received this year as last, still much of the work ordered by the City Council remains undone and as this work is gradually increasing from year to year, there can be but one way of meeting the demand, and that is by an increased appropriation.

COBBLE STONE GUTTERS.

More attention should be paid to this branch of the street work, as there are many edgestones which are falling out of place each year simply because the gutters are not paved. It would also prevent the washing of many of the streets which are now very expensive to

keep in repair and also be a large item in the matter of keeping the City sewers clean, as much dirt washes into the sewers this way which is of necessity very expensive to remove.

PAWTUCKET BOULEVARD.

During the year a large amount of money has been expended in the construction of the "Pawtucket Boulevard," the most expensive part to grade having already been finished. Another year very rapid progress can be made in the work as we are gradually getting nearer the gravel used for grading and filling purposes.

PRECAUTIONS AGAINST FIRE.

I desire to again call your attention to the unguarded condition of the stable against fire, and to urge upon you the necessity of a better fire service.

SEWERS AND DRAINS.

There is a continually increasing demand for sewers, particularly in the suburban portions of the city, which should be met either by an increased appropriation or by loans, as it is absolutely necessary that more work should be done in this department.

ACKNOWLEDGEMENTS.

In closing I wish to return my sincere thanks to His Honor the Mayor, and the members of the City

Government, for their assistance and approval. To the City Engineer and assistants, and also to the heads of the several departments for their assistance and advice when needed. I am also indebted to my assistants, foremen and other employes of the departments for their co-operation in the City's interests.

Respectfully submitted.

HORACE P. BEALS,

Superintendent of Streets.

ANNUAL REPORT

OF THE

CHIEF ENGINEER OF FIRE DEPARTMENT

OF THE

CITY OF LOWELL,

FOR THE YEAR 1890.

LOWELL, MASS.
DAILY NEWS JOB PRINT, HILDRETH BUILDING.
1891.

CITY OF LOWELL.

In Board of Aldermen, Feb. 10, 1891.

Received and ordered on file. Sent down for concurrence.

MICHAEL J. DOWD, City Clerk

In Common Council, Feb. 10, 1891.

Received and ordered on file, in concurrence.

DAVID CHASE, Clerk.

REPORT.

CHIEF'S OFFICE, PALMER ST. ENGINE HOUSE,
LOWELL, January 1st, 1891.

To the City Council of the City of Lowell:

GENTLEMEN—In accordance with the requirements of the ordinances governing the Fire Department, it becomes my duty, as Chief Engineer, to present to you the annual report of the Fire Department of Lowell for the year ending December 31, 1890.

The report will be found to contain statements in detail embracing the amount of expenditures, a register of the department, with number of badge, age, residence and occupation of each member, a record of all fires and alarms which have occurred during the year and the causes thereof, with the names of the owners or occupants, the loss and and insurance, as nearly as could be ascertained, with the number and location of the fire-alarm boxes; also an inventory of all property belonging to the department, in charge of the several companies, and such other information as is thought proper for your consideration.

The following statement will show the receipts and expenditures:

RECEIPTS.

Appropriation	$80,000 00	
Loan	20,000 00	
Received from other sources	560 00	
	$100,560 00	
Transferred to Pauper Department	504 96	
		$100,055 04

EXPENDITURES.

Pay Roll	$66,045 36	
Water Works, for hydrants, etc	10,192 50	
New Hose Wagon	400 00	
New Sleigh	78 00	
Seven New Extinguishers	219 00	
New Bells, Wire and rental of Telephone	973 00	
Rent	40 00	
Express and Freight	58 39	
New Horses, exchange and use of Horses	2,606 50	
New Hose Pipes and Repairs	1,637 55	
Laundry	120 62	
Hay, Grain and Straw	4,424 23	
Horse Shoeing	938 50	
Veterinary and Medicine	475 51	
New Harnesses, Whips and Repairs	646 50	
Beds and Furniture	870 28	
Coal and Wood	2,271 78	
Alterations and Repairs of Apparatus	2,412 55	
Alterations and Repairs on Houses	1,185 85	
Oil, Sponges, Brooms, Soap, Etc	1,062 78	
Gas	778 36	
Cloth, Buttons and Badges	529 72	
Fire Alarm Expenses	1,739 10	
Incidentals	222 11	
	$99,928 19	
Balance	126 85	
		$100,055 04

SALARIES OF MEMBERS OF FIRE DEPARTMENT.

Chief Engineer	$1,500 00 a year.
First Assistant Engineer	300 00 a year.
Other Assistant Engineers	275 00 a year.
Secretary of the Board	25 00 a year.
Foremen of Companies (call)	225 00 a year.
Call Men	200 00 a year.
Permanent Men	2 75 a day.

FORCE.

The Department is divided into two classes—Permanent and Call. The permanent force consists of

1 Chief Engineer,
1 Fire Alarm Operator,
13 Hosemen,
4 Patrolmen,
19 Drivers,
10 Laddermen.
4 Engineers of Steamers.

A total of 52, of which 10 are Foremen and 5 Assistant Foremen.

The call force consists of

4 Assistant Engineers,
21 Laddermen,
59 Hosemen,

A total of 84, of which 3 are Foremen and 8 are Assistant Foremen.

This makes a total of 136 men, divided into companies as follows:

4 Steam Fire Engine Companies, with Hose Reels,
5 Horse Hose Companies,
3 Hook and Ladder Companies, with 2 Chemicals attached,
1 Patrol Company.

The changes in the force during the year have been as follows:

Death	1
Appointed on call force	14
Transferred from call to permanent	7
Discharged	22
Transferred	6

There has been a decrease of 8 call men. The two hand-hose companies have been disbanded. A company of 8 men, 3 of which are permanent, with a two-horse reel, has been organized and placed in commission February 24th, to be known as Hose Company No. 8, stationed in the old Chemical house on Merrimack street; also, a company of 6 men, 2 of which are permanent, with a one-horse hose wagon, was organized November 1st, to be known as Hose Company No. 9, stationed in the new house in Ayer City. There has been an increase of 7 permanent men, 5 of which are attached to the two new companies, 1 to Hose Company No. 6, the other to the Patrol Company. I think it is for the interest of the City to make a small increase each year to the permanent force, as the improved facilities for extinguishing fires necessitates the arrival of the men with the apparatus. The present permanent force is composed mostly of mechanics, who have performed labor in repairs to the houses, stables and apparatus, thereby saving the city considerable expense.

The Chief has charge of the street lights, in addition to his other duties.

APPARATUS.

Since the last report the only addition to the equipment has been in the purchase of a one-horse

Hose Wagon, built by the Sawyer Carriage Manufacturing Co., of this city, and seven Babcock Fire Extinguishers, placing one on each reel and wagon, and the changing from two to three horses on the first size Engine and the Babcock Truck. The permanent men have made five three-horse poles to be used on the other engines and trucks in bad weather.

The apparatus is kept in the best possible condition, and consists at present of four Engines, four two-horse Reels, five one-horse Hose Wagons, one Babcock Aerial and two Trucks of other patterns, two Chemical Engines, thirteen Fire Extinguishers, one Patrol Wagon and Sleigh fully equipped, nine Hose Pungs on runners, seven Fuel Wagons, three Wagons and one Sleigh for use on Fire Alarm, one Wagon and Sleigh for Chief's use. In reserve there are one Engine, one two-horse and one one-horse Reel, two hand Hose Carriages; also, there is one hand Hose Carriage stationed at the City Farm.

FIRE-ALARM.

This branch of the service has been maintained in most excellent condition by the operator Mr. George B. Whitney, and has given perfect alarms the past year.

There have been one hundred and twenty-one first, and one second alarm, given from signal boxes

the past year. Two new boxes have been placed in circuit the past year, numbered and located as follows:

134—Main, corner Pleasant street, Ayer City.
149—Alder, corner Bartlett street.

Connected with the service there is one ten-circuit non-interfering repeater, one ten-circuit cut-out and testing switchboard, eleven galvanometers, nine bell strikers, twelve large gongs for Engine Houses, thirteen small gongs, thirteen indicators, one line tester, thirteen electro-magnets and connections for opening stall doors, twenty electric light current protectors, seventy-eight public and two private signal boxes, eighty-two miles of wire, the whole supplied by a gravity battery of three hundred and thirty-two cups There is also one large gong and indicator combined, in the Police Station.

TELEPHONE.

Our telephone system has caused us a great deal of annoyance the last three or four years, it being impossible at times to transmit messages understandingly, there being fifteen complete stations and sixteen extension bells on this line to talk through; but a plan was devised by the Telephone Company by which a new line of about fifteen miles of wire was run, new bells procured and placed on the old line, and the transmitters and telephones were put on the new line of wire, mak-

ing our service one of the best in the country, and it is giving the best of satisfaction. There are connected with this system fifteen stations, consisting of a transmitter, telephone, bell and battery; there are also sixteen extension bells for the sleeping rooms of the Engine Houses, and about thirty miles of wire owned by the City and under the care of the Fire Alarm Operator, except the transmitters and telephones, which are leased from the Telephone Company.

HORSES AND HARNESSES.

There have been six horses added to the department the past year. One each on Chemical B, Engine 3, Truck 3, Hose 9, and two on Hose 8, making a total of thirty-seven. Nine unserviceable horses have been changed the past year. The horses now are in good condition, but the service required of them, by the enforced idleness that they are compelled to endure and when called upon to respond to alarms, is calculated to soon break them down and render them unfit for use in this department. There are eleven pairs of double, two sets of three-horse hitch, and eight single swinging harnesses of the Berry patent. There are also five harnesses to make up three-horse hitches for the other Engines and Trucks for use in bad weather, an extra horse being hired for that purpose.

HYDRANTS.

During the year twenty-one new post and seven Lowry hydrants have been added, and two old flush hydrants removed by the Water Board, making a total of eight hundred and forty-four, for which this department is charged annually twelve dollars each. The posts added are located as follows: Cheever street, four; Perry street, three; Palmer street, two; Aiken avenue, Bachman, Blodgett, Chester, Exeter, Eighteenth, Gershom, Humphrey, Rolfe, Lawrence, St. Hyacinth streets, Livingston avenue, one each. The Lowrys are located as follows: Merrimack, opposite Palmer; Market, opposite Palmer; Prince, Dutton entrance to Merrimack yard; Central, corner Church; Suffolk, opposite Tremont and Suffolk office; Dutton, corner Fletcher streets.

PROTECTIVE DEPARTMENT.

This department is maintained by the City, and consists of one company of five permanent men. The call men belonging to this company the first of the year were transferred to the new Hose Company, No. 8, and one permanent man has been added. This Company has again demonstrated their usefulness in saving property from damage at fires, and have been of great assistance in subduing small fires with their extinguishers, during the past year. February 8th, a call was made from the Shaw Hosiery, by the bursting of a water

pipe; this Company was sent; they spread eleven large covers, thereby saving the Shaw Co. a heavy loss that could not have been recovered by insurance. Also, April 18th, at the fire in the card room of the Massachusetts Mills, they spread fifty-five covers (all that we have), also saving them a heavy loss, which I think shows that there is some use for this department inside the walls of the property insured by the Manufacturers' Mutual Insurance Company. They have spread three hundred and fifty-nine covers, and have used ninety-eight extinguishers the past year.

Chemical Engine C, attached to Truck 2, used twenty-two tanks. Chemical Engine B, attached to Truck 3, used thirty-two tanks.

HOUSES.

There has been one new house built the past year, in Ayer City, for the accommodation of a Hose Wagon. The old Chemical house on Merrimack, corner Race street, has been re-fitted for a Hose house, and a new tower for drying hose has been added to it. There have also been a number of improvements made in some of the other houses. All of the troughs for washing hose have been taken out, and the hose washer patented by some of the members of Engine 2 has been put in their place, which is a great improvement.

FIRES AND LOSSES.

It must be admitted on examination of the records, that this City has experienced a remarkable immunity from disastrous fires the past year. The whole number of alarms of fire that occurred during the year ending December 31, 1890, was one hundred and seventy-one first, and one second or general alarm. One hundred and twenty two were given from signal boxes, nineteen by telephone and thirty-one still alarms, to every one of which some part of the department has responded.

There has been an increase of forty-nine alarms over last year. The whole amount of loss, as near as could be ascertained, was $74,725.56; the amount of insurance was $455,006.00; the amount of insurance paid was $74,505.56, making the net amount of loss above insurance $220.00. This is the largest number of alarms and the smallest net loss of any year that I have been connected with the Department, which will be thirty-four years next May. There have also been a number of slight fires extinguished by members of the Police force, and other citizens, where the Department was not called. There have also been several false alarms, some of which were called pool alarms. Pools were made up by depositing ten cents apiece for the number of boxes, which is eighty, making eight dollars in the pool; each man drawing a number, the man holding the number of the box pulled first received the money.

Some of them became over anxious, and would cause their box to be pulled first, but that was stopped after awhile; then a man, partially insane, was caught, who said he did it because he liked to see the department come out; he was sent to the insane department at the Poor Farm. Another boy, about twelve years old, was sent to the Reform School until he was twenty-one.

There have been several fires of a threatening character during the past year, one of which was May 30th, in the four-story brick block on Prescott street, 70x25 feet, occupied by Sherman & Manning, furniture, Boston Clothing Company, A. W. Derbyshire & Co., grocers, Samuel P. Pike, market, J. W. Brooks, undertaker, Gookin Bros., furniture, J. B. Currier, undertaker, and Reynolds' Dye House. The fire originated in the basement of Sherman & Manning's, near the elevator shaft. A man was at work within two feet, so he said, of where the fire started, but he did not know how it caught, as the first he saw of it, it was coming up the other side of some furniture he was packing to send off; he had to run to escape being burned to death; he was scorched some. It spread rapidly through the elevator way to the roof, spreading through the rooms of the four stories. On the arrival of the fire apparatus, which was only a short distance away, the rear portion of Sherman & Manning's was burning fiercely. The fire communicated through

the doors in the brick partition walls to their sales-rooms directly over the stores of Derbyshire and Pike, doing considerable damage to them by water. Some of the others suffered a loss by smoke. The total loss was $28,634.71. The next largest loss was in the card room of one of the Massachusetts mills, April 18th, which sustained a loss of $10,-591.00. The Western Avenue fire, July 7th, at 11.18 P. M., came near being a very serious one, as the surrounding property was composed of lumber, lumber sheds and stables. It caught in the box shop of Allen & Cheney, supposed from the shavings in the boiler-room, as the Department was called there in the forenoon of the same day, for a slight fire in the shavings in front of the boiler, which followed up the chute to the box shop. When the Department arrived, the fire had extended to the lumber sheds on the west side, occupied by Burnham, Forrest & Davis, and to the brick stable on the south side; the general alarm was immediately given, calling the entire Department. It was the hottest fire we have had since the Horse Railroad Stable, a strong wind blowing the sparks and cinders a long distance, setting a number of roofs on fire, which kept a part of the Department pretty busy putting them out. The loss at this fire was $7,392.50.

The Sawyer Carriage Company sustained a loss of $3,950.25 by a fire in their paint shop. H. K.

Ferrin's Carriage Repository and Stable caused a loss of $2,933.00, July 22d. Another chance for a large fire, was the burning of C. H. Walker's Stable, in the rear of Tyler street. The fire was so quick that they did not have time to get a horse and wagon out. It was set by two little boys playing with matches, setting some bedding on the floor on fire. Two two-story double-tenements and the L of another house caught from this fire before the arrival of the Department. The total loss was $1,455.45.

The Courier Building, January 30th, Dyer Building, April 19th, Stott's block, May 8th, Creamery Lunch, July 21st, Davis & Sargent's lumber yard, August 29th, Davis & Sargent's Block, occupied by Marshall & Crosby as a furniture manufactory, Oct. 9th, but for the prompt response of the Department, in each and every instance, might have been attended with disastrous results.

The services of this Department have been called eight times for fires out of the city. April 7th, at Dracut, by a fire in the picker room of the Merrimack Woolen Mills. One Engine, Truck, three Hose Wagons, and Patrol Wagon was sent out, but before their arrival, the fire had been got under control, the covers of the Patrol Company only being used. Cause: caught from the picker, and the loss was $841.00. July 21st, box 241 was pulled for a fire in Atherton Machine Company's

Foundry, in Tewksbury. Four Hose Wagons, two Engines, Truck, Chemical and Patrol were sent out, but owing to the scarcity of water, they could not do much except to protect the large mills and out-buildings; the loss was $24,000.00; cause unknown. August 8th, a barn in Chelmsford, owned by R. Barris; one Engine, three Hose Wagons, Truck, Chemical and Patrol sent; the house was saved; loss, $500; cause, unknown known; supposed tramps smoking. September 24, house and barn in Chelmsford, owned by Dr. Benoit, and occupied by Martin Earl; three Hose Wagons, Engine, Truck, Chemical and Patrol sent; no water; they could not give much assistance; loss, about $3,200.00 cause, kerosene oil lamp explosion. October 11th, a large barn in Tewksbury, containing six cows, two heifers, two horses, two pigs, lot of hens, and about twenty-five tons of hay were burnt; four Hose Wagons, Engine, Truck, Chemical and Patrol sent; shed connecting house and barn was pulled down, and the house saved; loss, $3,000.00; cause, incendiary. October 12th, another large barn in Tewskbury, containing four cows, two heifers, pair of oxen, horse, seventy-five tons of hay and a lot of squash were burnt; loss, $4,500.00; cause, incendiary. October 26th, in Chelmsford, a large two-story house and L, owned by W. Hoyt. When the alarm was given, the house was so near burnt, none of the Department

were sent; loss, $4,500.00; cause, supposed to have caught from the stove in the L.

November 18th, another call from Tewksbury; this time there were two barns and large shed, containing one horse, which was forgotten, being tied in a new place that night, a lot of wagons, farming tools and a large lot of hay were burnt. Two houses were saved by great exertion. the L of one of the houses connecting with the shed was pulled down by the aid of two pair of oxen. Two Chemicals and Truck sent; loss, $5,000,00; cause, incendiary. The total loss of these eight fires was $45,541.00.

There have been two arrests for Arson, and only one investigation. A number of alarms have been put under the head of mysterious or supposed incendiary fires, which, I think if the truth were known some of them would show carelessness on the part of owner or occupants. For the lack of evidence, these cases have not been investigated before a Judge, as the law directs. Unless there is some good evidence, it is useless to put the City to the expense of an investigation, and it is almost impossible to convict a person of incendiarism, unless they are actually detected in the act.

February 11th, at 9.25 P. M., box 21 called the Department to a fire in a three-story building (brick) owned by Thomas Nesmith; the two stores, being connected, were occupied by George Morrison

as a dry and fancy goods store. Mrs. Smith occupied one-half of the two upper stories as a photographic saloon and tenement, the other half being occupied as a boarding house. The fire was set in four different places; one in the centre of one of the stores on a counter, one in the front cellar of the same store, one under the stairs leading from the cellar to the store, the other under the stairs leading from the street to Mrs. Smith's rooms. The Board of Engineers ordered an investigation, which came off before Judge Hadley. As it was an important case, the District Attorney was notified to conduct it. He appointed Lawyer Qua to act in his place. All of the evidence was sent to the District Attorney, and, as no notice has been taken of it, I suppose it has been forgotten. The loss on the stock was $6,900.00, and on the building only $75.00.

June 18th, Box 46, at 12.22 A. M., called the Department to a fire in a large three-story wooden block, on West Fourth street, containing about one hundred persons, and, across a fifteen-foot alley, another block of the same size. Norman J. Murray occupied the lower front tenement, and when the Department arrived they found the fire burning in his bed-room; the mattress was about one-half burnt, and the other half was thrown into the street, and was found to have been covered with kerosene oil; the fire in the room was soon put

out without much damage. Upon investigation, a place was found where another fire had been set on the floor in the sitting-room; a pile of rags had been saturated with kerosene and burnt, leaving the mark on the floor, also a hole in the carpet; this had gone out itself; a third fire was found burning in a back room filled with tables, chairs covered with kerosene piled on top of the tables, blinds closed, and a rubber coat hung up over the window; two holes were burnt through the floor, and another most through under the tables; this fire must have been burning some time, but, it being nearly air-tight, it did not get much headway. I asked Murray if he had any insurance; he said, "No;" but afterwards we found two policies, of two hundred dollars each, in his coat pocket. He said he found his back door broken open, and somebody had robbed him of a large black pocket book, containing valuable papers and thirty four dollars, also, his wife's jewelry, and set the place on fire, which looked a little thin. I examined the door and found it could not have been broken as he said. He had a suspicious fire on his premises January 3rd, where he lived before he came to this place; he kept a small eating saloon there. The chairs, tables, dishes etc., that were stored in the back room, was the furniture from that saloon; he received eighteen dollars insurance at that time. I ordered his arrest, and

sent him over to the Police Station in my team; after crossing the bridge he threw his pocket-book, which he said had been stolen, into the street, which was picked up by one of the street-sweepers a few minutes after the team had passed. He was tried in the Police Court and bound over to the Grand Jury in one thousand dollars bonds; was bailed; a bill was found by the Grand Jury, and at his trial he was defaulted. The lives of between one and two hundred people were risked for the small insurance of four hundred dollars on this man's furniture that was not worth one-half of it.

The other case, June 21st, seemed to be a case of spite. A Mrs. Haley was arrested for putting kerosene on the hen-house of Michael Linane, and throwing a shovelful of hot coals on the house roof, setting it on fire. Mrs. Haley was tried in the Police Court, bound over to the Grand Jury, a bill found, and a trial before a Jury and found guilty; her case was carried up on exceptions by her counsel.

The following deaths by burning have occurred the past year:

January 29th, Mary J. Scanlon, 13 years old, night-dress caught fire from a stove. February 6, Mrs. Sarah Rice and Amelia Valencour, two elderly ladies at work in the waste and oil room of the Tremont and Suffolk Mills; cause, unknown. April 15th, Lizzie Magna, 9 years old, playing with matches

set her clothes on fire. June 23rd, Emanuel Higginbottom, 5 years old, playing with matches. September 3rd, Mrs. Mary Hanson, kerosene lamp exploded and set her clothes on fire. October 7th, Myrtle W. Hutchins, 5 years old, crib caught fire and she was suffocated; cause, unknown; supposed she was playing with matches.

During the year the Department has been called upon to mourn the loss of one of their members by death, Henry C. Daggett, a call member of Truck Company No. 1. He joined the Department in 1866, as member of Engine Company No. 1, and was transferred to Truck No. 1, the following year, and served with that Company until the day of his death, which occurred March 2d. His long and faithful service won for him the respect and esteem of every member of the Department.

Several casualties have occurred to the members of the Department, none of which were very serious. Captain E. Cunningham, Charles Riley, John Emerson and James Curtin of Hose Company No. 6, Captain Jerry Flagg of the Patrol, and E. M. Foster of Engine 2.

LOWELL FIREMEN'S FUND ASSOCIATION.

This benevolent association was organized December 17, 1853, for the purpose of affording relief to such of its members as should receive injuries while in the discharge of their duties. The income is

derived from an annual assessment upon each member, and by donations from the citizens and others; and in behalf of the association, I would return thanks to all of those who have aided them in the past.

The following statement shows the amount standing to the credit of the association January 1, 1891:

Cash on hand May 1, 1890	$12,204 68
Cash received to January 1, 1891	2,026 10
Total	$14,230 78
Cash paid out to January 1, 1891	446 00
Balance on hand January 1, 1891	$13,784 78

CONCLUSION.

In conclusion, I desire to express my appreciation to my Assistant Engineers, Officers and Members of the several Companies, for their fidelity and bravery, and for the prompt and efficient manner in which they have responded to all alarms; the support and good-will manifested to me on all occasions, and their efforts to sustain the reputation of the Department. I desire, also, to return my sincere thanks to His Honor, Mayor Palmer, the Board of Aldermen, and Members of the City Council, for the interest manifested, and the support given to the requirements of the Department during the year; to the Committee on Fire Department for their hearty co-operation in all matters tending to the improvement of the Department; to the

Chief and other Members of the Police Force for their assistance at fires and on other occasions; to the City Clerk, Auditor. Superintendents of the different departments, and all others with whom I have had pleasant intercourse, will please accept my sincere thanks.

Respectfully submitted,

EDWARD S. HOSMER,

Chief Fire Department.

Schedule of Fires which have occurred in the City of Lowell during the Year ending December 31, 1890.

Date. 1890.	Time.	Signal.	Location.	Wood, Brick or Stone.	Owned by	Occupied by	Occupied as	Amount of Damage.	Amount of Insurance.	Amount of Ins. Paid.	Cause of Fire.	Remarks.
Jan. 3,	12.38 a. m.	52	Race Street	Wood.	M. A. Hoyle	N. J. Murray	Eating House	$150.00	$2,800.	150.00	Supposed Incendiary.	
„ 3,	2.14 p. m.	Tel.	Central Street	Wood.	A. Blessington	M. Buckley	Grocer	17.50	600.	17.50		
								60.00	3,000.	60.00	Candle and kerosene oil barrel.	
“ 3,	12.00 m.	141	Talbot Street		D. Nichols	D. Nichols		55.00	500.	55.00		
“ 6,	6.02 a. m.	34	Tanner Street	Wood.	T. C. Edwards	T. C. Edwards	Grocer	10.00	1,400.	10.00	Burning rubbish set grass and fence.	
“ 7,	3.35 p. m.	37	Lawrence Street	“	R. C. Lord	Mrs. Riley	Tenement				Defective chimney.	
“ 9,	11.00 p. m.	Still.	Central Street	“	John Boyle	Several Families	“				“ “	
“ 14,	2.04 p. m.	38	Court Street	“	George McKenna	George McKenna	Stable				Chimney	Hose 6 responded.
“ 15,	11.30 p. m.	Still.	Merrimack Street	Brick.		L. T. Montferrand	Dry Goods				Combustion of leaves and straw	
“ 18,	5.07 p. m.	35	Charles Street	Wood.	J. B. Swift	Several Families	Tenement				Defective electric light	Chemical B responded.
“ 18,	2.30 p. m.	Still.	“ “	“	Mrs. Campbell	“	“				Defective chimney.	
“ 22,	9.30 p. m.	“	Fayette Street	“	M. Bohannan	“	“				Chimney	Hose 6 responded.
“ 28,	7.45 p. m.	34	Tanner Street	“	Coburn Shuttle Co	Sawyer Carriage Co	Carriage Mfg	782.25	5,500.	782.25	Defective chimney	Hose 4 responded.
						“		3,168.00	7,000.	3,168.00	Kerosene oil stove in paint shop.	
“ 30,	8.50 p. m.	13	Merrimack Street	Brick.	Marden & Rowell	Marden & Rowell	Printing Office	107.16	3,500.	107.16	Unknown; supposed boys with m'ch's	
“ 31,	7.05 p. m.	Tel.	Nesmith Street	Wood.	W. Farrington	W. Farrington	Tenement	78.25	11,000.	78.25	Bed; cause unknown.	
Feb. 1,	5.40 p. m.	Still.	Fayette Street	“	B. Conlan	Several Families	“				Chimney	Hose 4 responded.
“ 1,	5.58 p. m.	31	“ “	“		“	“				“	
“ 8,	3.10 p. m.	Still.	Shaw Street	Brick.	Shaw Hosiery Co	Shaw Hosiery Co	Mill				Water pipe burst	Patrol Co. sent. Spread 11 covers.
“ 5,	7.10 p. m.	34	Marshall Road	Wood.	H. F. Thatcher	H. F. Thatcher	Tenement	750.00	1,250.	750.00	Defective chimney.	
“ 9,	6.45 p. m.	16	Rogers Street	“	J. McSwegan	Several Families	“				Bed	
“ 10,	1.12 p. m.	24	Middlesex Street								Fight between Italians.	
“ 11,	9.25 p. m.	21	Merrimack Street	Brick.	T. Nesmith	G. Morrison	Dry Goods	75.00	8,000.	75.00	Incendiary	Investigated.
						“		6,900.00	16,000.	6,900.00		
“ 14,	10.58 a. m.	Tel.	Rock Street	Wood.	W. H. Wiggin	Wm. Belton	Tenement				Combustion of rags under sink.	
“ 16,	1.45 a. m.	„	Broadway	“	W. Downing	Several Families	“				Chimney.	
“ 16,	12.36 p. m.	33	“		D. Gage						Boys set grass on fire.	
“ 16,	5.41 p. m.	Tel.	Cemetery								“ “ “	
“ 27,	7.06 a. m.	Still.	Central Street	Brick.	J. Tyler Stevens	Talbot & Co	Clothing				Steam from boiler	Patrol responded.
Mar. 6,	2.15 a. m.	53	Church Street	Wood.	E. A. Smith	Mrs. Ferren	Tenement	38.50	2,500.	38.50	Combustion of old rags in closet.	
“ 7,	8.45 a. m.	16	Chapel Street	“	H. B. Hill	Several Families	“	297.80	2,000.	297.80	Hot ashes in barrel in shed.	
“ 8,	5.49 p. m.	3	Broadway	“	J. Meadowcroft	Spindle City Dye W'ks	Dry Room	60.00	2,000.	60.00	Combustion of lint from steam pipes	
						“		95.00	1,250.	95.00		
						Lowell Hosiery		50.00	1,000.	50.00		
“ 12,	5.40 p. m.	51	Congress Street	Wood.	C. B. Coburn	W. G. Carter	Woolen Mfg	113.55	2,200.	113.55	Caught from Picker	
						“		240.00	1,500.	240.00		
“ 17,	6.33 p. m.	73	Mammoth Road	“	H. Lannon	H. Lannon	Tenement	167.00	1,140.	167.00	Rats' nest in partition	
“ 17,	9.29 p. m.	73	“ “	“	“	“	“				Re-kindled	
“ 17,	9.45 p. m.	73	“ “								False alarm	
“ 27,	4.52 a. m.	9	Salem Street	“	J. P. Quinn	Several Families	Tenement	141.60	3,000.	141.60	Rats' nest in partition	
“ 30,	9.25 p. m.	114	High Street								False alarm	
Apr. 1,	3.25 p. m.	64	Durant Street								Boys set grass on fire.	
“ 1,	5.21 p. m.	125	Market Street	“	D. J. Murphy		Wood Shed				Barrel of rubbish.	
“ 4,	12.30 p. m.	Still.	Concord Street	“	P. Thornton	P. Thornton	Tenement				Chimney set roof	Hose 4 responded.
“ 5,	12.34 p. m.	64	Durant Street		Locks & Canals						Boys set grass on fire.	
“ 6,	3.15 a. m.	3	Broadway	“	W. W. Carey	W. W. Carey	Storehouse	448.25	10,000.	448.25	Supposed matches or cigar-	
“ 6,	1.49 p. m.	Still.	Fort Hill Park		City						Boys set grass on fire	Chemical Band Patrol responded.
“ 7,	10.41 a. m.	Tel.	Dracut	Brick.	Mer'k Woolen Mills		Woolen Mfg	841.00		841.00	Caught from Picker.	
“ 7,	7.10 p. m.	Still.	Fourth Street		City	Hose 5	Engine House	25.00			Defective chimney.	Hose 5 and Truck 1 responded.
“ 7,	4.49 p. m.	19	Union Street	Wood.	A. Farrell	Several Families	Tenement				Chimney.	
“ 9,	3.59 p. m.	27	Fourth Avenue	“	J. Lannon	M .Cregan	Stable				Bedding, supposed pipe smoking.	
“ 13,	8.15 a. m.	Still.	Cady Street	“	P. Shanley	Several Families	Tenement				Smoke from chimney	Hose 6 responded.
“ 14,	3.26 p. m.	42	Middlesex Street	Brick.	Davis & Sargent	Davis & Sargent	Boiler Room				Back draft from furnace set shavings.	
“ 17,	8.50 p. m.	Tel.	Queen Street	Wood.		Several Families	Tenement				Kerosene oil lamp exploded.	
“ 18,	10.49 a. m.	13	Bridge Street	Brick.	Massachusetts Corp	Massachusetts Corp	Card Room	10,591.00	10,591.	10,591.00	Unknown.	
“ 18,	6.15 p. m.	5	Kitson Street	“	Kitson Machine Co	Kitson Machine Co	Machine Shop	159.39	75,000.	159.39	Caught from boiler thro' wooden chute	
“ 18,	10.50 p. m.	Still.	North Street	Wood.	John Morrison		Tenement				Chimney	Hose 6 responded.
“ 19,	1.05 a. m.	42	Middlesex Street	Brick.	J. Meadowcroft	J. L. Wotton	Boarding House	370.00	9,000.	370.00	Barrel of hot ashes in store-room.	
				“		“		259.00	1,800.	259.00		
“ 19,	6.25 a. m.	5	Dutton Street	“	A. L. Brooks	A. L. Brooks	Wm. Parr				Rubber belt slipping on pulley.	
“ 19,	12.40 p. m.	Tel.	West Pine Street		P. Shay						Brush	
“ 19,	11.40 p. m.	13	Middlesex Street	Wood.	Dyer Heirs			96.15	2,500.	96.15	Combustion of old hair and excelsior.	
						A. Eaton	Furniture	530.34	3,000.	530.34		
						G. F. Allen	Harness Mfg	10.00	5,000.	10.00		
						Dickson Bros	Store Room	75.00	500.	75.00		
“ 21,	3.26 p. m.	51	Congress Street	“	C. B. Coburn	W. G. Carter	Picker Room	155.00	1,500.	155.00	Caught from Picker,	
“ 26,	10.02 a. m.	121	Western Avenue	“	A. L. Russell	Allen & Cheney	Box Mfg				Sparks from chimney set roof.	
May 2,	8.54 p. m.	172	Appleton Street								False alarm.	
“ 3,	7.24 p. m.	54	Broadway	Brick.	Lowell Hosiery		Boarding House				Child playing with matches set bed.	
“ 4,	3.59 p. m.	41	Nesmith Street								False alarm.	
“ 6,	11.50 a. m.	Tel	Westford Street		Smith Bros						Tar kettle caught on fire.	
“ 7,	5.59 a. m.	72	Middlesex Street	Wood.	Dr. Chase Heirs		Fruit Store				Kerosene oil stove exploded.	
“ 8,	1.15 a. m.	72	“ “	Brick.	C. A. Stott		Stores and Offices	1110.84	30,000.	1,110.84		
						C. E. Adams		465.00	8,000.	465.00		
“ 13,	9.15 p. m.	Still.	Market Street	“	H. Farrell	H. P. Young					Naptha lamp exploded.	
“ 21,	7.00 p. m.	6	Worthen Street	“	Dr. Plunkett	Dr. Plunkett	Tenement	23.20	7,000.	23.20	Unknown.	
“ 25,	12.00 a. m.	34	Marshall Road		Mrs. S. Spaulding		Wood Pile	10.00			Incendiary.	
“ 30,	9.38 a. m.	12	Prescott Street	“	Southwick Heirs		Stores and Offices	3,439.00	27,000.	3,439.60	Unknown.	
						Sherman & Manning	Furniture	22,436.00	24,000.	22,436.00		
						Boston Clothing Co	Clothing	500.00	21,000.	500.00		
						Sam Pike	Market	273.61	1,500.	273.61		
						A. W. Derbyshire	Grocers	1986.00	10,000,	1,986.00		
June 2,	4.35 p. m.	42	Middlesex Street	Brick.	Davis & Sargent	Davis & Sargent	Box Shop				Hot bearing.	
“ 3,	6.23 p. m.	Tel.	Appleton Street	“	Charles Runnels	Several Families	Tenement				Stove smoking.	
“ 3,	7.38 p. m.	28	Aiken Street	Wood.	E. B. Perley						Chimney.	
“ 4,	10.50 a. m.	Tel.	Liberty Street	“	Dr. R. Wood	Dr. R. Wood	“	191.50	5,000.	191.50	Killing moths in carpet with benzine.	
“ 7,	8.46 p. m.	23	West Third Street	“	F. A. Taylor	Several Families	“	8.12	5,000.	8.12	Kerosene oil lamp exploded.	
“ 13,	11.58 a. m.	9	Salem Street	“	L. Carmichael	“	“				Chimney.	
“ 13,	6.30 p. m.	115	Moore Street								False alarm.	
“ 18,	12.22 a. m.	46	West Fourth Street	“	David McNair	N. J. Murray	Tenement	50.00	5,000.	50.00	Incendiary	N. J. Murray arrested.
“ 18,	6.04 p. m.	18	Short Street	“			Unocupied				Boys set straw in attic on fire.	
“ 21,	7.07 p. m.	42	Middlesex Street	Brick.	J. Meadowcroft	E. Bean	Bakery				Rubbish caught from oven.	
“ 21,	9.19 p. m.	38	Blossom Street	Wood.	M. Linane	M. Linane	Hen Pen				Incendiary	Mrs. M. Haley arrested.
“ 21,	9.57 p. m.	61	Lawrence Street	Brick.	Belv'dr Woolen Mills	Mills No. 2	Store Room				“	
“ 22,	1.50 p. m.	Still.	Merrimack Street	“	Massachusetts Corp	A. W. Griffin	Boarding House				Clothes in closet caught from pipe.	
“ 23,	12.30 p. m.	“	“ “	“	A. G. Pollard	A. G. Pollard & Co	Dry Goods				Roof caught from tin smith's pot.	
“ 25,	5.50 p. m.	28	Tucker Street	Wood.	G. W. Harris	Several Families	Tenement				Kerosene oil lamp exploded.	
“ 28,	6.27 p. m.	39									False alarm.	
uly 2,	8.20 p. m.	37	Watson Street	“	Jane Bush	Several Families	Tenement	15.00	1,200.	15.00	Fire crackers set roof.	
“ 3,	11.51 p. m.	81	New Wilder Street		A. Bibeault						Brush set by boys.	
“ 4,	12.30 a. m.	28	Cheever Street	“	J. A. Lombard	Several Families	Tenement				K. oil lamp knocked of table and broke	
“ 5,	4.05 a. m.	52	Moody Street	“	Wm. Langley	J. S. Bourbon	Undertaker	40.00	800.	40.00	Combustion of oily waste and shavings	
						“		161.77	500.	161.77		
“ 6,	10.38 a. m.	42	Middlesex Street	“		Several Families	Tenement				Dirty clothes in closet.	
“ 7,	10.45 a. m.	121	Western Avenue	“	A. L. Russell	Allen & Cheney	Box Shop				Shavings caught from boiler.	
“ 7,	11.18 p. m.	121	“ “	“	“	“	“	2450.00	2,800.	2,450.00	Unknown; supposed same as morn'g.	
						“		2000.00	2,000.	2,000.00		
						F. E. Lewis	Carpenter	500.00	500.	500.00		
						W. C. Wing	Milk Room	217.50	1,500.	217.50		
						Burnham, Forest Davis	Lumber Dealer	2100.00	2,800.	2,100.00		
						Whitney & Tibbets	Lumber Shed	125.00	125.	125.00		

Schedule of Fires which have occurred in the City of Lowell during the Year ending December 31, 1890.

Date. 1890.	Time.	Signal.	Location.	Wood, Brick or Stone.	Owned by	Occupied by	Occupied as	Amount of Damage.	Amount of Insurance.	Amount of Ins. Paid.	Cause of Fire.	Remarks.
July 10,	9.52 a. m.	8	School Street	Wood.	E. J. Medina		Tenement	$50.00	$3,000.	$50.00	Hot ashes in barrel.	
" 13,	2.51 a. m.	8	"								False alarm	
" 14,	11.55 a. m.	Tel.	Jackson Street	Brick.	Appleton Corp	G. Webster	Tenement	60.00	Blanket	60.00	Box of Straw under stairs set by boys.	
" 16,	9.40 a. m.	28	Hall Street	Wood.	G. W. Harris	Stanton & Thurston	Stable				Manure in cellar set by boys.	
" 18,	11.59 a. m.	53	George Street	Brick.	Middlesex Corp	J. Knowles	Shed	10.00			Sparks from locomotive set roof.	
" 19,	6.45 p. m.	Still.	Chelmsford Street		T. H. Elliott		Peat Meadow				Men set brush fire, set peat	Hose 1, 2 and 8 responded; 8 1-2 hours
" 20,	12.15 p. m.	"	Adams Street	Wood.	Thomas Fay	Several Families	Tenement				Defective chimney	Hose 8 responded.
" 20,	1.30 p. m.	"	"	"	"	"	"	10.00	1,200.	10.00	Defective chimney.	" "
" 21,	4.15 p. m.	"	Market Street	"	E. Conway						Chimney.	Hose 3 responded.
" 21,	9.16 p. m.	13	Paige Street	Brick.	Marden & Rowell	Creamery Lunch	Bakery	266.00	1,500.	266.00	Unknown; supposed combustion.	
						"		238.66	1,000.	238.66		
" 21,	10.57 p. m.	241	Tewksbury	Wood.	Atherton Machine Co.	Atherton Machine Co.	Foundry	24,000.00	26,000.	24,000.00	Unknown	Out of the city.
" 21,	11.00 p. m.	4	Dutton Street								False alarm	
" 22,	7.34 p. m.	71	Middlesex	Wood.	H. K. Ferrin	H. K. Ferrin	Carriage Rep'y Stable	1,433.00	3,675.	1,433.00	Unknown; supposed smoking in hay	
					"	"	Contents	1,500.00	3,500.	1,500.00		
" 30,	5.46 a. m.	24	Middlesex	Wood.	E. T. Goward	R. McNulty	Wood Shed				Boy and matches	
Aug. 1,	7.45 p. m.	9	Salem Street	"	L. Carmichael	Several Families	Tenement				Chimney.	
" 2,	12.38 a. m.	71	Range Street	"	O. M. Pratt	J. L. Gilman	Wood Shed	240.65	1,000.	240.65	Supposed hot ashes in barrel.	
" 3,	12.18 a. m.	71	"	"	"	"	Tenement	19.00	1,000.	19.00	Clothes in closet.	
" 4,	4.39 p. m.	35	Tyler Street	"	C. H. Walker	A. B. Kendall	Stable	400.00	400.	400.00	Boys and matches.	
					A. B. Kendall			325.00	500.	325.00		
					J. B. Hunt	Two Families	Tenement	504.45	4,100.	504.45	Caught from the other fire.	
					W. R. Cady	"	"	193.00	1,500.	193.00	" "	
					F. F. Coburn	J. Breed	"	36.00	800.	36.00	" "	
" 8,	1.49 a. m.	38	Chelmsford	Wood.	R. Barris	J. F. Everett	Stable	500.00			Supposed tramps	Out of the city.
" 13,	4.50 a. m.	Still.	Jackson Street		Hamilton Corp		Coal Shed				Combustion of coal	Chief and Patrol responded.
" 16,	10.50 p. m.	21	Shattuck Street	Brick.	Old Lowell S. Bank	J. & J. F. Pearsons	Fruit Store				Gas Stove set floor.	
" 17,	1.20 a. m.	19	Court Avenue	Wood.	A. G. Smith		Out House				Careless use of matches or cigar stub.	
" 20,	6.45 a. m.	Still.	Central Street	Brick.	P. Dempsey	A. L. Kittridge	Paint Shop				Defective electric light wire.	
" 28,	11.29 a. m.	51	Congress Street	Wood.	T. F. Pratt	E. E. Woodbury	Tenement	375.00	1,500.	375.00	Match in a wood box,	
" 29,	10.32 p. m.	54	School Street		Davis & Sargent		Lumber Yard	650.00	7,000.	650.00	Supposed Incendiary.	
" 30,	3.06 a. m.	54	" "		"	"	"				Re-kindled	
" 30,	10.43 a. m.	35	Lawrence Street	Wood.	B. Watson	H. Coburn	Wood Shed				Boy and matches.	
" 31,	4.55 a. m.	46	River Street	"	J. S. Brown	G. Gosselin	Tenement				Kerosene oil lamp exploded.	
Sept. 3,	9.22 a. m.	39	Willie Street	"	F. Scollon	Several Families	"				Sparks from chimney set roof.	
" 4,	6.39 p. m.	5	Suffolk Street	"	S. P. Pike	P. H. Barry	Tonic Beer Mfg	226.12	1,300.	226.12	Unknown; caught in basement.	
				"	P. H. Barry			250.00	2,000.	250.00		
				"	F. McDuffee	Several Families	Tenement	32.00	600.	32.00	Caught from the other fire.	
" 20,	9.54 p. m.	53	William Street	"	E. D. Fletcher	M. Curtin	"				Bed.	
" 23,	6.31 p. m.	46	Bridge Street	"	J. M. G. Parker Heirs	Several Families	"				Child dropped kerosene oil lamp.	
" 24,	3.30 p. m.	Still.	Lamson Street	"	William Parr		"				Gas leak and matches set lathing	Truck 2 and Chemical C responded.
" 24,	7.32 p. m.	"	Middle Street	Brick.	J. Tyler Stevens		Printing and Box Sh'p				Water left running, sink overflowed	Patrol responded.
" 24,	2.32 a. m.	138	Chelmsford	Wood.	Dr. Benoit	M. Earle	House and Barn	3,200.00			Kerosene oil lamp exploded.	Out of the city.
" 26,	2.51 p. m.	9	Adams Street	"	H. Harrington	Several Families	Tenement				Children and matches, excelsior in at'c	
" 26,	7.57 p. m.	4	Dutton Street	"	F. Jewett	F. E. Jewett	Cider Mill	25.00			Boiler set floor.	
" 27,	7.12 p. m.	Tel.	Westford Street		J. W. Bennett						Brush.	
" 27,	10.38 p. m.	138	Gorham Street								False alarm.	
" 28,	12.58 p. m.	Still.	Market Street		Cahill Bros.						Chimney.	Hose 3 responded.
Oct. 7,	2.55 p. m.	18	Cambridge Street	Wood.	G. E. Hutchins	G. E. Hutchins	Tenement	25.00	1,500.	25.00	Supposed child playing with matches	Myrtle, 5 yrs. old, suffocated in crib.
" 9,	6.30 p. m.	42	Middlesex Street	Brick.	Davis & Sargent	Marshall & Crosby	Furniture Mfg	200.00	3,100.	200.00	Combustion of rags in paint shop.	
					Marshall & Crosby		"	601.00	4,000.	601.00		
					Knapp & Son		Machine Shop	50.00	3,500.	50.00		
" 11,	12.38 a. m.	47	Tewksbury	Wood.	A. Trull	M. Boyle	Barn	1,300.00	1,000.	1,000.00	Incendiary	6 cows, 2 heifers, 2 pigs, 2 horses, hens
				"	M. Boyle			1,000.00				and 25 tons hay burnt.
" 12,	1.15 a. m.	49	Tewksbury	"	J. E. & M. W. Foster		Barn	4,500.00	3,000.	3,000.00	Incendiary	4 cows, 2 heifers, 2 oxen, 75 tons of hay
" 13,	8.30 p. m.	Still.	Middle Street		J. M. G. Parker Heirs	E. Hartley	Tenement				Kerosene oil lamp exploded.	and lot of squash burnt.
" 17,	11.30 a. m.	"	Merrimack Street	Brick.	C. Abels, Agent	Dr. Patterson	Offices				Rubbers left on stove to dry	Hose 3 responded.
" 25,	8.08 a. m.	28	Ward Street	Wood.	F. Quinn						Defective chimney.	
" 26,	3.31 p. m.	136	Chelmsford	"	W. Hoyt			4,500.00	5,200.	4,500.00	Unknown	Out of the city.
" 29,	7.45 p. m.	21	John Street	Brick.	Five Cent Sav'gs Bank	G. E. Hull & Co	Laboratory	37.00	25,000.	37.00	Sugar left boiling on gas stove.	
				"	G. E. Hull & Co.			100.00				
" 30,	7.58 a. m.	67	Hildreth Street								False alarm	Boy run over by Patrol..
" 30,	6.09 p. m.	19	Union Street	Wood.	J. McCafferty	J. McCafferty	Tenement				Kerosene oil lamp exploded.	
" 31,	4.29 p. m.	19	Charles Street	"	A. C. Wheelock						Boy and matches set straw in yard.	
Nov. 2,	12.20 a. m.	Tel.	Middlesex Road	"	J. M. G. Parker Heirs		Barn	200.00	200.	200.00	Supposed tramps smoking.	
" 2,	12.27 a. m.	35	Lawrence Street								False alarm, pulled by a boy	Boy sent to Reform School until 21.
" 4,	6.15 a. m.	Tel.	Brown Street	Wood.	City		Voting Booth				Caught from a stove pipe.	
" 7,	11.40 p. m.	121									False alarm.	
" 11,	5.00 p. m.	5	Worthen Street	"			Store Shed				Boy with match drawing rubber c'me t	
" 13,	7.38 a. m.	14	Andover Street	"	J. Pilling	J. Pilling	Tenement	20.00	3,000.	20.00	Stove rags in closet.	
" 13,	8.30 a. m.	Still.	" "	"	J. C. Swan	J. E. Swan	"	81.00	4,000.	81.00	Caught from the other fire.	
" 25,	11.19 a. m.	24	Middlesex Street	Brick.	G. W. Ely	G. W. Ely					Kettle of tar on stove got on fire.	
" 17,	10.04 p. m.	28	Hall Street	Wood.	H. B. Shattuck	Several Families	"				Supposed incendiary.	
" 18,	6.00 a. m.	Tel.	Tewksbury	"	D. H. LaPort	D. H. LaPort	Stable	50.00			Incendiary	Wagons, tools, 75 tons hay and 1 horse
" 18,	8.12 p. m.	14	Church Street	"	A. & L. Twiss	A. & L. Twiss	Two Barns and Shed	5,000.00	3,500.			burnt.
" 19,	8.30 a. m.	Tel.	Maiden Lane	"								
" 28,	4.40 p. m.	"	Fort Hill Park		E. Hennesey	Several Families	Tenement				Wooden fire-board caught from chim'y	
" 29,	5.15 p. m.	5	Fletcher Street		City						Boys set grass on fire.	
Dec. 1,	10.30 a. m.	Still.	Middlesex	Brick.	A. L. Brooks & Co.	A. L. Brooks & Co.	Boiler Room	78.80	3,000.	78.80		
" 3,	7.15 a. m.	46	Second Street	Wood.	T. H. Elliott	Thomas Steele	Fruit Store				Smoking in cellar set rubuish.	
" 4,	1.46 a. m.	241	Hanover Avenue	"	Mrs. Stanley	V. G. Barnard	Tenement	30.00	1,500.	30.00	Waste paper behind stove set partition.	
				"	A. W. Derbyshire	A. W. Derbyshire	Stable	1,000.00	1,000.	1,000.00	Stove in harness room	2 horses burnt.
" 4,	4.48 p. m.	19	Gorham Street	"	"	Contents		646.95	1,100.	646.95		
" 5,	5.13 p. m.	25	Market Street	"	Chas. Jones Heirs	Several Families	Tenement				Chimney.	
" 8,	4.00 p. m.	Still.	Gorham Street	"	P. O. Rourke	D. McCarty					Smoking in bed.	McCarty jumped out of window.
" 10,	1.43 a. m.	16	Central Street	"	City		Voteing Booth				Roof caught from stove pipe.	
" 11,	6.15 a. m.	Still.	High Street	"	J. Fahey	J. Fahey	Stable				Candle left burning on box set box.	
" 11,	3.06 p. m.	13	Bridge Street		A. C. Munroe Heirs	Several Families	Tenement				Defective chimney.	
" 13,	3.57 p. m.	37	Kinsman Street	Brick.	George Flint	Mrs. Davis	Boarding House				Combus'n of clothes in closet, match's.	
" 14,	6.51 p. m.	7	Dutton Street	Wood.	D. W. C. Farrington	Several Families	Tenement				Chimney.	
" 19,	1.50 a. m.	42	Marshall Street	Brick.	H. Emery	W. R. Wilson	Sewing Machine Agt				Cigar stub in wooden spit box.	
" 28,	12.05 a. m.	32	Bridge Street	Wood.	S. J. Cherrington	Unoccupied	Tenement	83.55	2,500.	83.55	Plumbers thawing water pipe.	
				"	Costello Bros.	Costello Bros.	Stable	500.00	500.	500.00	Unknown	1 horse burnt.
" 28,	4.00 p. m.	Still.	Suffolk Court		A. C. Wheelock	Several Families	Tenement		275.	Not Settled	Children with matches set clothes.	Hose 8 responded.
" 29,	8.25 p. m.	Tel.	Hale Street	"	J. Harriman	J. Harriman	"				Sparks from chimney set roof.	

Loss, $74,725.56. **Insurance, $455,006.00.** **Insurance Paid, $74,505.56.** **Loss above Insurance, $220.00.**

FIRE DEPARTMENT.

JANUARY 1, 1891.

CHIEF ENGINEER.

EDWARD S. HOSMER, { Office, Palmer Street Engine House. Residence, 12 Livermore Street.

ASSISTANT ENGINEERS.

JAMES F. NORTON, . . . Residence, 18 Ames Street.
GEORGE F. SALMON, . Residence, 24 Mt. Washington Street.
EDWARD MELOY, . . . Residence, 86 Charles Street.
HENRY W. BURTON, . . Residence, 4 Kimball Avenue.

TELEGRAPH OPERATOR.

GEORGE B. WHITNEY, . Residence, Palmer Street Engine House.

COMMITTEE ON FIRE DEPARTMENT, 1890.

Aldermen—Dickinson and Boutwell.
Councilmen—Crowell, Savage and Spalding.

ENGINE COMPANY, No. 1.

TWELVE MEMBERS. HOUSE ON GORHAM STREET.

Badge.	Rank.	Name.	Age.	Occupation.	Residence.
15.....	Foreman	C. D. Foley	36	Carpenter	31 Newhall Street.
10.....	Asst. Foreman.....	J. J. Jennings.....	34	Permanent.....	Engine House.
1.....	Clerk.....	Geo. W. Lovett.....	40	Driver, Wagon.....	Engine House.
12.....	Engineer.....	J. W. Jantzen.....	37	Permanent.....	Engine House.
119....	Driver	R. O'Connell.....	35	Driver, Engine	Engine House.
17.....	Asst. Engineer	T. McNamara.....	46	Machinist	Cor. George & Tyler.
19.....	Hoseman.....	G. M. Cleary.....	40	Carpenter	Engine House.
16.....	Hoseman	T. Caruthers.....	45	Stamper.....	Engine House.
14.....	Hoseman	P. Curtin.....	38	Moulder.	141 Lawrence Street.
13.....	Hoseman	S. O'Connell.....	39	Plasterer.....	30 Fay Street.
18.....	Hoseman	T. Collins.....	34	Mason	307 Lincoln Street.
11.....	Hoseman	W. Dolan.....	28	Knitter.....	Engine House.

SCHEDULE OF PROPERTY

Belonging to the City, in Care of Engine Company, No. 1.

Engine, built by Union Machine Company, of Fitchburg, Mass., in 1872; has two double acting steam cylinders, $7\frac{1}{8}$ inches in diameter, 8-inch stroke; 2 double-acting pumps, $4\frac{3}{8}$ inches in diameter, arranged to work separately or together; weight when loaded, 7,575 pounds. 1 one-horse hose wagon, built by Abbott-Downing Co, of Concord, N. H; 3 horses, 1 set double and 1 single harness, 1 pair lead bars, 4 blankets, 1 hose sleigh, 1 fuel wagon. 1 four-way chuck, 1 branch connection, 3 pipes with stop nozzles, 1 $2\frac{1}{2}$-inch cap, 1 5x$2\frac{1}{2}$ inch reducer, 4 small reducers, 6 spanners, 8 lanterns, 4 wrenches, 6 ladder straps, 4 bars, 2 axes, 1 bucket, 1650 feet $2\frac{1}{2}$-inch cotton hose, 100 feet 1-inch rubber hose, 1 set blocks, 1 extinguisher, 7 beds and bedding, 1 mirror, 2 bureaus, 18 chairs, 3 shovels, 1 fork, 4 brooms, 1 30-foot rope, 2 pails, 1 12-foot ladder, 1 steam boiler, 1 ash can, 1 coal hod, 4 coal boxes, 2 blocks, 1 jackscrew, 1 carriage jack, 1 copper gooseneck, 1 basket, 1 work bench and vise, 6 spittoons, 1 chisel, 1 pair of shafts, 2 oil cans, 12 badges, 12 sets buttons, 1 hose washer, 100 feet 1-inch rubber hose, 1 three horse pole, and all tools for cleaning horses and repairing engine.

ENGINE COMPANY, No. 2.

TWELVE MEMBERS. HOUSE ON BRANCH STREET.

Badge.	Rank.	Names.	Age.	Occupation.	Residence.
20.....	Foreman	A. C. Stearns.....	50	Permanent.....	Engine House.
21.	Asst. Foreman.....	J. W. Abbott.....	44	Carpenter	7 Goward Court.
2.	Clerk	H. Boynton.....	39	Driver, Carriage....	Engine House.
29.....	Engineer.....	C. S. Hibbert	45	Permanent	Engine House.
90.....	Driver	M. J. Burns.....	37	Driver, Engine	Engine House.
28.....	Asst. Engineer.....	E. M. Foster	31	Machinist	148 Westford Street.
22.....	Hoseman.....	H. R. Morrison.....	31	Machinist	Merrimack Street.
23.....	Hoseman	F. B. Akers.....	36	Machinist	14 Grove Street.
27.....	Hoseman	A. S. Maynard.....	38	Carpenter	18 East Pine Street.
25.....	Hoseman	G. A. Bennett	50	Roofer.....	Carleton & Marshall.
24.....	Hoseman	G. C. Barclay.....	34	Carpenter	3 Parker Street.
26.....	Hoseman	C. E. Alway.....	27	Carpenter.....	45 Summer Street.

SCHEDULE OF PROPERTY

Belonging to the City, in Care of Engine Company, No. 2.

Engine, built by Manchester Locomotive Works, Manchester, N. H., weight when loaded, 7,600 pounds; 6⅞-inch cylinder, 8-inch stroke, 4½-inch double-acting pumps; two-horse hose carriage, built by Leverich & Co., of New York; 1800 feet 2½-inch cotton hose, 50 feet ¾-inch rubber hose, 1 hose sleigh, 1 fuel wagon, 5 horses, 5 harnesses, 5 blankets, 1 two-way chuck and reducer, 1 four-way chuck, 1 branch connection, 4 pipes, 6 spanners, 6 ladder straps, 2 hydrant wrenches, 1 axe, 2 bars, 1 jackscrew, 1 pair lead bars, 1 three-horse pole, 6 coal boxes, 12 chairs, 3 mirrors, 3 clocks, 1 work bench and vise, 5 beds and bedding, 1 lathe, heater and tank, steam boiler and radiators, 2 set blocks, 2 ash cans, 1 table, 16 badges, 16 set buttons, 1 hose washer, 1 pair steps, 1 pair of skids for loading engines and hose wagons on cars, and all tools for cleaning horses and repairing engine, 1 extinguisher.

ENGINE COMPANY, No. 3.

TWELVE MEMBERS. HOUSE ON PALMER STREET.

Badge.	Rank.	Name.	Age.	Occupation.	Residence.
30.....	Foreman.....	F. Hoyt	42	Permanent	Engine House.
36.....	Asst. Foreman.....	W. H. Landers	39	Machinist	11 L. M. S. Corp.
3.....	Clerk.....	L. C. Brainard.....	32	Driver, Hose Wagon	Engane House.
33.....	Engineer.....	M. I. Collins	35	Permanent.....	Engine House.
133.....	Driver.....	B. C. Reed.....	37	Driver, Engine	Engine House.
34.....	Asst. Engineer.....	J. G. Merchant.....	52	Engineer.....	188 Westford Street.
37.....	Hoseman	F. E. Roark.....	41	Lighter.....	80 Middle Street.
38.....	Hoseman	Geo. Halstead.....	33	Painter	64 High Street.
31.....	Hoseman	J. Angluin.....	34	Permanent.....	Engine House.
32.....	Hoseman	T. Welch	33	Piper.....	43 Bartlett Street.
39.....	Hoseman	H. Coulam.	37	Second-Hand.....	49 Hamilton Corp.
35.....	Hoseman	O A. Knapp	26	Carpenter	————

SCHEDULE OF PROPERTY

Belonging to the City, in Care of Engine Company, No. 3.

Engine, built by Manchester Locomotive Works, Manchester, N. H., weight when loaded, 9,300 pounds; 35 feet suction hose with hydrant couplings, 1 one-horse hose wagon, 1 hose sleigh, 4 horses, 1 set three horse hitch and 1 single harness, 4 halters, 4 blankets, 1,650 feet 2½-inch cotton hose, 1 four-way chuck and reducer, 1 reducer and cap, 1 six way Lowry chuck, 4 pipes, 2 stop nozzles, 2 branch connections, 2 hydrant wrenches, 4 spanners, 1 bar, 1 shovel, 4 ladder straps, 6 lanterns, 7 beds and bedding, 2 mirrors, 2 clocks, 15 chairs, 1 hose rope, 1 jackscrew, 1 monkey-wrench, 1 carriage jack, 12 badges, 12 set buttons, 1 hose washer, 1 extinguisher, and all tools for cleaning horses and repairing engine.

ENGINE COMPANY, No. 4.

TWELVE MEMBERS. HOUSE ON HIGH STREET.

Age.	Rank.	Name.	Age.	Occupation.	Residence.
40.....	Foreman	J. J. Quinlan.....	38	Permanent	Engine House.
47.....	Asst. Foreman.....	J. E. Burns	30	Market	7 Prescot Corp.
4.....	Clerk.....	W. King.....	48	Driver, Wagon	Engine House.
41.....	Driver	J. J. Harrington....	40	Driver, Engine	Engine House.
134.....	Engineer.....	Frank G. Collins....	32	Permanent	Engine House.
45. ...	Asst. Engineer.....	Charles Morse.....	49	Engineer.....	158 Fairmount Street
44.....	Hoseman	M. Conners	39	Plasterer.....	55 Pleasant Street.
42.....	Hoseman	J. E. Sullivan	38	Mason	Engine House.
43.....	Hoseman	James Dolan.....	50	Painter	75 Concord Street.
46.....	Hoseman	J. P. Smith	27	Clerk	77 Concord Street.
48.....	Hoseman	T. Tighe	33	Finisher	39 Concord Street.
49.....	Hoseman	J. Banford	33	Mason	48 Charles Street.

SCHEDULE OF PROPERTY

Belonging to the City, in Care of Engine Company, No. 4.

Engine, built by Manchester Locomotive Works, Manchester, N. H., weight, 8,000 pounds; 6⅞-inch cylinder, 8-inch stroke, 4½-inch double-acting pumps; 1 one-horse hose wagon, built by Abbott Downing Co., of Concord, N. H.; 1 one-horse sleigh, 4 horses, 1 set three-horse and 1 single harness, 1,500 feet cotton hose, 50 feet ¾-inch rubber hose, 1 carriage jack, 2 clocks, 2 mirrors, 1 table, 18 chairs, 2 dusters, 2 shovels, 4 pails, 5 spittoons, 1 fuel wagon, 6 beds and bedding, 1 bureau, 12 set buttons, 16 badges, 12 spanners, 5 ladder straps, 1 jackscrew, 6 coal boxes, 1 5x2½-inch reducer, 1 hose washer, 1 extinguisher, 4 blankets, 1 bench and vise, 1 steam boiler and radiators, 1 heater and boiler, 1 pair steps, 3 bars, 3 pipes, 2 pair reducing coupling, and all tools for cleaning horses and repairing eagine. Also, 1 four-wheel horse hose carriage (stored).

HOSE COMPANY, No. 5

NINE MEMBERS. HOUSE ON FOURTH STREET

Badge.	Rank.	Name.	Age.	Occupation.	Residence.
50.....	Foreman	C. F. Hemenway...	41	Permanent	Hose House.
55.....	Asst. Foreman.....	Frank Mansur	41	Carpenter	45 Fifth Street.
5.....	Clerk.....	A. E. Kidder	35	Driver	Hose House.
54.....	Hoseman.....	A. Merrill.....	53	Truckman.....	25 Fifth Street.
51....	Hoseman	E. L. Hewes.....	29	Tinsmith.....	19 Third Street.
56.....	Hoseman	F. D. Morey	26	Carpenter	11 Methuen Street.
53.....	Hoseman	J. McCafferty	27	Blacksmith.....	Carleton Place.
57.....	Hoseman	J. McKissock.....	38	Carpenter	15 Nineteenth Street.
52.....	Hoseman	Fred Mansur.....	32	Carpenter	13 Third Street.

SCHEDULE OF PROPERTY

Belonging to the City, in Care of Hose Company, No. 5.

One two-horse hose carriage, built by the Manchester Locomotive Works, Manchester, N. H.; 2 horses, 1 pair harnesses, 2 bridles, 2 blankets, 1,600 feet 2½-inch cotton hose, 25 feet ¾-inch rubber hose, 2 pipes and stop nozzles, 1 reducer, 1 two-way and 1 four-way chuck, 1 branch connection, 1 reducing coupling, 1 cap, 8 spanners, 2 wrenches, 6 lanterns, 2 bars, 1 ladder, 1 axe, 1 carriage jack, 5 beds and bedding, 20 chairs, 1 table, 1 clock, 2 pails. 3 shovels, 3 brooms, 2 forks, 1 duster, 1 sifter, 3 ash cans, 2 oil cans, 3 spittoons, 1 set blocks, 140 feet rope, 1 pulley, 1 hose sleigh, 1 fuel wagon, 1 boiler and radiators, 10 badges, 9 set buttons, 1 pair steps, 1 hose washer, and all tools for cleaning horses.

HOSE COMPANY, No. 6.

NINE MEMBERS. HOUSE ON CENTRAL STREET.

Badge.	Rank.	Name.	Age.	Occupation.	Residence.
61.....	Foreman.....	E. Cunningham	43	Steam Fitter.....	82 Charles Street.
60.....	Asst. Foreman.....	C. Riley.....	35	Permanent	Hose House.
6.....	Clerk.....	E. O'Connell.....	33	Driver	Hose House.
62.....	Hoseman	A. Gibson.....	34	Permanent	Hose House.
63.....	Hoseman	P. Emerson	32	Carpenter	2 Madison Street.
64.....	Hoseman	E. Crowley	36	Coppersmith	Hose House.
65.....	Hoseman	P. McLaughlin	35	Tinsmith.....	14 Keene Street.
66.....	Hoseman	J. Freeman.....	33	Lamp Lighter.....	19 Keene Street.
67.....	Hoseman	J. Emerson	28	Upholsterer	Hose House.

SCHEDULE OF PROPERTY

Belonging to the City, in the Care of Hose Company, No. 6.

One two-horse hose carriage with pole and shafts, 1 hose sleigh, 2 horses, 1 set double harness, 2 blankets, 2 forks, 2 brooms, 1,600 feet 2½ inch cotton hose, 50 feet ¾-inch rubber hose, 2 pipes and stop nozzles, 6 lanterns, 1 axe, 1 four-way and 1 two-way chuck, 2 wrenches, 1 reducing coupling, 1 cap, 4 spanners, 3 ladder straps, 1 branch connection, two dusters, 1 carriage jack, 6 beds and bedding, 10 chairs, 1 carpet, 4 spittoons, 2 clocks, 2 oil cans, 1 extinguisher, 2 shovels, 2 mirrors, 2 pails, 1 hose washer, 1 pair steps, 1 wagon, 2 bridles, 1 table, 9 badges, 9 set buttons, 1 boiler and radiators, and all tools for cleaning horses.

HOSE COMPANY, No. 7.

NINE MEMBERS. HOUSE ON FLETCHER STREET.

Badge.	Rank.	Names.	Age.	Occupation.	Residence.
70.....	Foreman	D. J. Hurley	39	Permanent	Hose House.
73.	Asst. Foreman.....	E. W. Fletcher	37	Moulder	68 L. M. S. Corp.
7.	Clerk	J. A. Fletcher	34	Driver	Hose House.
71.....	Hoseman.....	J. H. Joyce	49	Permanent	Hose House.
75.....	Hoseman	T. F. Welch	41	Cabinet Maker.....	49 Common Street.
78.....	Hoseman	J. J. Murray	39	Cabinet Maker.....	91 Bowers Street.
74.....	Hoseman	D. W. Russell	37	Knitter	15 Oliver Street.
72.....	Hoseman	T. H. Rogers	39	Wood Turner.....	Hose House.
77.....	Hoseman	R. E. Burns.....	25	Cabinet Maker.....	16 Nichols Street.

SCHEDULE OF PROPERTY

Belonging to the City, in Care of Hose Company, No. 7.

One one-horse hose wagon, built by Abbott Downing Company, of Concord, N. H.; 1 engine, built by Hunneman & Company, in 1866 (in reserve); 1 horse, 1 hose sleigh, 1 harness, 1 bridle, 1 blanket, 1 extinguisher, 1,850 feet 2½-inch cotton hose, 2 pipes and stop nozzles, 10 spanners, 1 four-way and 1 two-way chuck, 2 reducers, 2 bars, 3 brooms, 1 carriage jack, 2 pails, 1 connection with cap, 3 ladder straps, 1 duster, 1 ladder, 1 step-ladder, 1 brush, 7 lanterns, 8 spittoons, 2 shovels, 20 chairs, 4 beds and bedding, 2 axes, 1 ash can, 2 clocks, 2 mirrors, 1 gas stove, 1 boiler and radiators, 12 badges, 11 set buttons, 1 hose washer, 4 tons steamer coal, and all tools for cleaning horses.

HOSE COMPANY, No. 8.

EIGHT MEMBERS. HOUSE ON MERRIMACK STREET.

Badge.	Rank.	Name.	Age.	Occupation.	Residence.
150.....	Foreman	Wm. J. Flynn.....	38	Permanent	Hose House.
151.....	Clerk.....	Fred Boynton	29	Driver	Hose House.
86.....	Hoseman	D. H. Crowley.....	30	Permanent	Hose House.
87.....	Hoseman	A. L. Cadwell	27	Insurance Agent....	54 Tremont Street.
88.....	Hoseman	H. C. Dana.....	26	Machinist	64 L. M. S. Corp.
89. ...	Hoseman	B. J. Dunn.....	28	Clerk	114 Adams Street.
85.....	Hoseman	L. S. Kimball	40	Roll Coverer	16 John Street.
83.....	Asst. Foreman.....	E. F. Saunders.....	25	Baker	Hose House.

SCHEDULE OF PROPERTY

Belonging to the City, in Care of Hose Company, No. 8.

One two-horse carriage, 1 two-horse sleigh, 2 horses, 1 pair of double harness, 2 bridles, 2 blankets, 1 extinguisher, 1,650 feet 2½-inch cotton hose, 2 pipes and shut off nozzles, 6 spanners, 1 four-way chuck, 1 bar, 1 axe, 3 ladder straps, 3 mops, 3 wrenches, 2 lanterns, 1 carriage jack, 3 brooms, 2 ash cans, 1 step ladder, 3 shovels, 5 cuspadores, 2 clocks, 1 water cooler, 1 mirror, 2 pails, 2 dusters, 1 rubber mat, 1 table, 11 chairs, 5 beds and bedding, 5 rugs, 1 boiler and radiators, 8 badges, 3 set buttons, 1 window brush, 1 scrub brush, 1 hose washer, 1 one-half peck measure, 2 forks, 50 feet ¾-inch rubber hose, and all tools for cleaning horses.

HOSE COMPANY, No. 9.

SIX MEMBERS. HOUSE ON LINCOLN STREET

Badge.	Rank.	Name.	Age.	Occupation.	Residence.
91.....	Foreman	S. E. Bartlett	42	Permanent	Hose House.
92.....	Clerk.....	P. S. Webster.....	43	Driver	Hose House.
93.....	Hoseman.....	G. H. Chapman.....	35	Wood Dealer.....	38 Lincoln Street.
94.....	Hoseman	J. Baxter.	32	Machinist	74 London Street.
95....	Hoseman	J. E. Wilkins	43	Machinist	6 Main Street.
96.....	Hoseman	P. J. Clune	29	Machinist	Hose House.

SCHEDULE OF PROPERTY

Belonging to the City, in Care of Hose Company, No. 9.

One one-horse hose wagon, built by the Abbott Downing Company, of Concord, N. H.; 1 horse, 1 harness, 1 blanket, 1 four-way chuck, 2 wrenches, 2 pipes and stop nozzles, 7 spanners, 1 bar, 3 ladder straps, 2 lanterns, 50 feet ¾-inch rubber hose, 1,150 feet 2½-inch cotton hose, 1 carriage jack, 2 clocks, 2 mirrors, 1 table, 12 chairs, 1 ash can, 1 duster, 1 shovel, 2 pails, 5 spittoons, 4 beds and bedding, 6 badges, 1 dust pan, 1 brush, 3 brooms, 1 oil can, 5 mats, 1 extinguisher, 1 sleigh, 1 hot water heater and radiators, 1 hose washer, and all tools for cleaning horses.

TRUCK COMPANY, No. 1.

TEN MEMBERS. HOUSE ON FOURTH STREET.

Badge.	Rank.	Name.	Age.	Occupation.	Residence.
102.....	Foreman.....	H. B. Downs	57	Carpenter	47 Hamilton Corp
101.....	Asst. Foreman.....	H. J. Foster.....	42	Permanent	Truck House.
100.....	Clerk.....	W. L. Peabody.....	42	Driver	Truck House.
105.....	Ladderman.....	R. W. Strickney.....	29	Janitor	Postoffice Block.
104.....	Ladderman	F. C. Loury	24	Carpenter	9 Fourth Street.
106.....	Ladderman.....	J. A. Pullen.....	62	Machinist	161 Merrimack Corp.
103.....	Ladderman.....	T. McCormick.	36	Lineman	Bridge Street.
109.....	Ladderman.....	G. F. Sargent.....	37	Carpenter	West Fourth Street.
107.....	Ladderman	William Hale	31	Piper	Chapel Street.
108.....	Ladderman.....	W. N. Flagg.....	45	Carpenter	Kirk Street.

SCHEDULE OF PROPERTY

Belonging to the City, in the Care of Truck Company, No. 1.

Hook and ladder truck, built by Buckley & Merritt, of New York; 1 Bangor ladder (sixty-five feet), 2 thirty feet, 1 twenty five feet, 2 roof ladders (one fifteen, the other twenty-five feet), 1 twelve feet, 4 forks, 4 axes, 4 buckets, 2 lanterns, 2 shovels, 1 bar, 1 door opener, 1 wrench, 2 horses, 1 set double harness, 2 blankets, 50 feet $\frac{3}{4}$-inch rope, 10 chairs, 2 brooms, 2 beds and bedding, 10 badges, 10 set buttons, 1 three-horse pole, 1 pair lead bars, 1 whiffletree, and all tools for cleaning horses.

TRUCK COMPANY, No. 2, with CHEMICAL ENGINE ATTACHED.

THIRTEEN MEMBERS. HOUSE ON WESTFORD STREET.

Badge.	Rank.	Names.	Age.	Occupation.	Residence.
121.....	Foreman	E. W. Bartlett.....	44	Permanent	Truck House.
120.....	Clerk	G. W. Alcott	37	Driver	Truck House.
132.....	Driver	J. A. Pierce.....	42	Driver Chemical	Truck House.
131.....	Ladderman.....	D. W. Hilliard.....	40	Permanent	Truck House.
130.....	Ladderman.....	G. A. Dickey.....	41	Permanent	Truck House.
123.....	Asst. Foreman.....	C. A. Thompson	46	Carpenter.	Kimball Avenue.
125.....	Ladderman.....	G. E. Maynard.....	33	Carpenter	East Pine Street.
126.....	Ladderman	Leo. Miller.....	27	Box Maker.....	5 Lane Street.
127.....	Ladderman	H. A. Gardner.....	39	Moulder	25 L. M. S. Corp.
128.....	Ladderman.....	C. Stackpole.....	35	Clerk	66 School Street.
129.....	Ladderman.....	S. E. Pickering	29	Carpenter.....	22 Branch Street.
122.....	Ladderman.....	E E. Smith	36	Machinist	25 L. M. S. Corp.
124.....	Ladderman.	Q. A. Foster.....	37	Machinist	34 East Pine Street.

SCHEDULE OF PROPERTY

Belonging to the City, in Care of Truck Company, No. 2.

Hook and ladder truck, built by Jucket & Freeman, of Boston, weight 4,500 pounds; single-tank chemical engine, rebuilt by the City, weight, 3,200 pounds; 1 Bangor ladder (fifty-five feet long), 2 thirty-two feet, 4 roof ladders (2 twenty-five feet, the other two twenty feet), 1 sixteen-foot ladder, 6 prop hooks, 4 axes, 2 adjustable hooks for roof ladders, 2 shovels, 6 lanterns, 4 forks, 2 rakes, 1 door opener, 3 bars, 200 feet rope, 4 pails, 2 whips, 1 carriage jack, 25 chairs, 1 table, 2 mirrors, 2 clocks, 1 duster, 1 brush, 50 feet ¾-inch and 250 feet 1-inch rubber hose, 3 plaster hooks, 1 hay hook, 4 small hay hooks, 2 wrenches, 3 chain dogs, 3 ash cans, 3 horses, 1 pair double and 1 single harness, 4 blankets, 3 halter bridles, 7 beds and bedding, 13 badges, 12 sets of regulation buttons, 5 cap badges, 1 three-horse hitch or pole, and all tools for cleaning horses.

BABCOCK TRUCK COMPANY, No. 3, WITH CHEMICAL ENGINE ATTACHED.

THIRTEEN MEMBERS. HOUSE ON PALMER STREET.

Badge.	Rank.	Name.	Age.	Occupation.	Residence.
110.....	Foreman	F. E. Fuller	41	Permanent.....	Truck House.
111.....	Asst. Foreman.....	Wm. Marsden	36	Permanent.....	Truck House.
112.....	Clerk.....	F. O. J. Townsend ..	36	Driver.....	Truck House.
140.....	Ladderman.....	H. C. Fernald	37	Permanent.....	Truck House.
113.....	Ladderman.....	F. W. Simons.....	39	Permanent.....	Truck House.
141. ...	Ladderman.....	H. F. Harris	38	Permanent.....	Truck House.
142.....	Driver.....	H. A. Merrill.....	28	Driver, Chemical....	Truck House.
143.....	Ladderman	J. Blackburn	33	Permanent.....	Truck House.
116.....	Ladderman.....	W. P. Maker.....	26	Machinist	3 L. M. S. Corp.
117.....	Ladderman.....	T. Dwyer.....	27	Loom Fixer	13 Willow Street.
118.....	Ladderman.....	C. W. Dana.....	34	Machinist.....	64 L. M. S. Corp.
114.....	Ladderman.....	E. Kerwin	41	Piper.....	Central and Mill
115.....	Ladderman..... ..	W. L. Kenney.....	37	Painter	6 Carpet Corp.

SCHEDULE OF PROPERTY

Belonging to the City, in Care of Truck Company, No. 3.

Aerial truck, built by the Fire Extinguisher Co., of Chicago, in 1888, weight 8,100 pounds; 1 two and 1 three-horse pole, 1 single tank Chemical engine rebuilt by the city, 5 horses, 1 extension ladder (eighty five feet), 1 fifty-five and 1 sixteen feet long, 1 thirty-five foot ladder, 1 thirty, 1 twenty, 1 twelve and 1 fourteen feet long, 1 door opener, 1 bar, 4 iron stakes, 1 sledge, 3 one-hundred foot ropes, 2 forks, 2 shovels, 6 hay forks, 6 pail hooks, 1 hammer, 1 wire cutter, 4 buckets, 8 lanterns, 7 axes, 2 monkey wrenches, 1 carriage jack, 1 jackscrew, 250 feet of 1-inch rubber hose, 50 feet of 1½-inch cotton hose, 2 spanners, 2 kegs soda, 40 pounds vitrol, 5 blankets, 1 set of three-horse and 1 set of double harnesses, 2 tables, 15 chairs, 3 clocks, 9 beds and bedding, 6 spittoons, 6 mops, 6 pails, 1 water cooler, 10 rugs, 2 mirrors, 21 badges, 10 sets regulation buttons, 50 feet ¾-inch hose, and all tools for cleaning harnesses.

PROTECTIVE COMPANY, No. 1.

FIVE MEMBERS. HOUSE ON WARREN STREET.

Badge.	Rank.	Name.	Age.	Occupation.	Residence.
80.....	Foreman	J. L. Flagg.....	55	Permanent	Protective House.
8.....	Clerk.....	J. Cowell	43	Driver	Protective House.
79.....	Asst. Foreman.....	W. H. Halstead.....	46	Permanent.....	Protective House.
81.....	.....	J. W. Halstead	42	Permanent.....	Protective House.
84.....	.....	H. B. Saunders.....	31	Permanent	Protective House.

SCHEDULE OF PROPERTY

Belonging to the City, in Care of the Protective Company.

One wagon complete, built by the Abbott Downing Co, Concord, N. H.; 1 traverse runner sleigh, 1 extra pole, 2 extra wheels, 2 horses, 1 set double harness, 2 blankets, 2 Johnson pumps, 4 extinguishers, 1 Siamese connection, 15 pounds soda, 20 pounds vitrol, 24 cans for soda, 70 bottles for vitrol, 8 brooms, 7 shovels, 4 squillgees, 3 iron pails, 3 large sponges, 2 axes, 1 pick, 2 bars, 2 hammers, 36 spikes, 2 augers, 1 lath rake, 2 monkey wrenches, 12 lanterns, 2 ten-foot folding ladders, 1 Spencer canvass chute and Dixon arrow gun, 2 dust pans, 60-gallon oil tank, 2 oil cans, 5 cap and 5 regulation badges, 5 sets regulation buttons, 6 beds and bedding, 24 chairs, 3 mirrors, 2 clocks, 1 table, 1 bureau, carpet, water cooler, boiler and radiators, 50 feet $\frac{5}{8}$-inch and 50 feet $\frac{7}{8}$-inch rope, 50 feet $\frac{3}{4}$-inch rubber hose, 4 ash cans, 4 mops, 3 chamois skins, 3 stable pails, 1 carriage jack, 2 stable brooms, 2 dusters, 2 pair of steps, 1 set of blocks, 3 spittoons, and all tools for cleaning horses.

Location of Signal Boxes.

3—Corner of Broadway and Mt. Vernon Streets.
4—Dutton Street, opposite Parker & Cheney's.
5—Corner of Cushing and Fletcher Streets.
6—Corner of Little and Lewis Streets.
7—Corner of Market and Dutton Streets.
8—Corner of Westford and School Streets.
9—Corner of Common and Salem Streets.
12—Market Street, Police Station.
13—Corner of Prescott and Merrimack Streets.
14—Corner of Fayette and Andover Streets.
15—Bleachery Street, on Bleachery stable.
16—Hosford Square,
17—Corner of Middlesex and Walker Streets.
18—Junction of Hale and Lincoln Streets.
19—Corner of Gorham and Union Streets.
21—Corner of Kirk and Merrimack Streets.
23—Corner of Coburn and River Streets.
24—Corner of Middlesex and South Streets.
25—Merrimack Street, near Tremont House.
26—Corner of Fletcher and Pawtucket Streets.
27—Corner of Riverside and Mammoth Streets.
28—Corner of Hall and Aiken Streets.
29—Corner of Tenth and Myrtle Streets.
31—Corner of High and East Merrimack Streets.
32—Corner of Bridge and Tenth Streets.
33—Corner of Broadway and Walker Streets.

34—Lincoln Street, on Tannery.
35—Corner of Charles and Lawrence Streets.
36—City Farm, on pole.
37—Corner of Whipple and Kinsman Streets.
38—Fair Grounds, on building.
39—Corner of Fletcher Street and Broadway.
41—Corner of Wyman and Nesmith Streets.
42—Middlesex Street, old Engine House.
43—Highland Street, Edson School House.
45—Engine House, Branch Street.
46—Corner of First and Bridge Streets.
47—Andover Street, near B. F. Butler's driveway.
48—Corner of Dover and Grove Streets.
49—Corner of Nesmith and Chestnut Streets.
51—Junction of Gorham and Thorndike Streets.
52—Corner of Moody and Austin Streets.
53—Central Street, Boston & Maine Depot.
54—School Street, near Gas Works.
56—Middle Street Engine House.
57—Warren Street, opposite George Street.
61—Lawrence Street, above Stott's Mills.
62—Corner of Bowers and School Streets.
63—Corner of Hale and Howard Streets.
64—Corner of Third and Myrtle Streets.
65—River Street, near Aiken Street Bridge.
67—Hildreth Street, opposite Lilley Avenue.
68—Corner of Sixth and Fremont Streets.
71—Middlesex Village, opposite Hotel, on pole.
72—Middlesex Street, opposite Huntoon's Stable.
73—Mammoth Street, near City line.
74—Varnum Avenue.
81—Corner of Pine and Wilder Streets.
82—Corner of Chelmsford and Grand Streets.
83—Corner of Powell and Smith Streets.

84—Corner of Westford and Gates Streets.
92—Bridge Street, opposite Whitney's.
114—High Street, corner of Porter.
115—Corner of Moore and South Whipple Streets.
121—Western Avenue, near railroad crossing.
125—Market Street, opposite Lewis Street.
128—Counting Room of the Tremont & Suffolk Mills (private).
129—Corner of Methuen and Beacon Streets.
131—Corner of East Merrimack and Howe Streets.
134—Main Street, corner of Plain.
136—Corner of Stevens and Parker Streets.
138—Corner of Lundberg and Gorham Streets
141—Corner of Fairmount and Talbot Streets.
149—Alder Street, corner of Bartlett.
161—Faulkner's Mills, Lawrence Street (private).
162—Pawtucket Street, opposite Ice Houses.
163—Tanner Street, near Scannell & Wholey's office.
172—Corner of Appleton and Favor Streets.
181—Corner of Stevens and Westford Streets.
241—Rogers Street.

FIRE-ALARM TELEGRAPH.

Location—Engine House, Palmer Street.

GEORGE B. WHITNEY, Operator.

10 Circuit Automatic Repeater, with Battery of.....332 Cups
Miles of Line Wire 82
Signal Boxes.....80
Engineer's Gongs..... 9
Engine House Gongs.....12
Indicators.....13
Bell Strikers 9
Gong and Indicator combined 1

The Strikers are located as follows: Palmer Street Engine House, Varnum School House, High Street Church, Court House, No. 1 Engine House, Franklin School House, Pawtucketville Church, No. 7 Hose House and Highland School House.

One stroke dismisses, two strokes call out the entire department.

Magneto Bell Telephone Circuit.

Complete Stations	15
Extension Bells	16
Miles of Wire	30

SCHEDULE OF PROPERTY

Belonging to the City, in Care of Fire Alarm Operator.

One 10 circuit automatic non-interference repeater, 1 cut-out testing switch-board, 1 line testing machine, 11 galvanometers, 78 public and 2 private signal boxes (non-interfering), 9 bell strikers, 12 large gongs, 9 small gongs, 13 registers, 13 electrical arrangements for opening stall doors, 82 miles of wire, 332 cups of battery, 17 magneto call bells, 16 extension bells, 30 miles of wire, 21 electric light current protectors, 1 barrel of glass insulators, 12 pole brackets, 2 saws, 2 hammers, 2 screw-drivers, 2 straps, with vises, 2 draw-straps and clutches, pliers, tongs, set bits and bit-stock, 3 shovels, 2 bars, 1 pickaxe, 2 spoons, 1 tamping bar, 1 cant-hook, 1 broadaxe, 2 pike poles, 3 pairs of climbers, 1 deadman, 3 ladders, ½ mile of wire, 1 draw-shave, fire-alarm box keys, locks, outside shells and doors to boxes, pocket-relay lanterns, desk, table, chairs, dusters, chamois skins, 1 horse, harness, blankets, 3 wagons, 1 sleigh, etc.

Schedule of Property

Belonging to the City, in the Palmer Street Engine House.

One horse, harness, wagon and sleigh for the Chief's use, 1 one horse and 2 hand hose carriages, 1 spare horse, 600 feet 2½-inch cotton hose, 2 two-way chucks, 1 lathe, 1 grindstone, tools, poles, shafts, 4 ladders, feed, salt, boiler and radiators, etc.

In Chief's office: 2 desks, set of drawers, 1 table, 16 chairs, 2 beds and bedding, 1 silver and 2 brass trumpets, mirror cloth, badges, buttons, 3 set dies for department buttons, 1 set dies for department badge, 1 large clock (Lawrence's patent), 1 small stop clock, chamois skins, dusters, soap, brooms, brushes, lanterns, medicines, sponges, matches, axle grease, etc.

The value of all the foregoing property is $125,000.00.

General Running Orders.

The Companies will respond to alarms of fire given from boxes as indicated on the running card.

The Chief, First Assistant and Protective Company will answer alarms from all boxes.

When an alarm of fire is given, all companies not responding will remain at their houses thirty minutes, unless dismissed by telegraph signals.

One blow of the engine house gongs and alarm bells will be understood as proclaiming the fire extinguished, and the Companies not attending dismissed.

Two strokes will constitute a general alarm, and all Companies will report immediately, after waiting thirty seconds to be sure it is not an alarm from another box.

After a first alarm is given, and before the recall signal is struck, should an alarm be given from another box, all unemployed Companies will respond.

This article will apply to all alarms until the dismissal is struck.

Two strokes repeated three times at 1-4 before 8 A. M., and 1-4 past 1 P. M. in summer, and 1-4 before 8 A. M., 1-4 before 1 and at 8.30 P. M. in winter, denote no session of schools.

The bells will be struck once at 1 and 8.30 P. M.

Instructions to Key-Holders.

Alarms are to be given from the box nearest location of the fire.

Upon the discovery or positive information of a fire, you will unlock the box, pull down the slide or hook once only, and let go.

If you hear no sound from the bell in the box, pull again; if you fail the second time, go to the next nearest box and do the same. Also, be particular to remain at the box until the arrival of an Engineer, who will release the key.

Each box contains a small bell, which if heard before you pull the hook, indicates that the alarm has been previously given from another box. In such cases do not pull the hook until you are sure the alarm has been completed.

Never signal for a fire seen at a distance. Never touch the hook except to give an alarm of fire. Give an alarm for no cause than an actual fire.

Second alarms for the same fire will be given only by one of the Engineers.

Never let the key go out of your possession, unless called for by the Chief Engineer. If you change your place of business or residence where the key is kept, return the key to the same officer.

Keys to the boxes are in possession of responsible parties in the vicinity of the boxes; also in the hands of the police.

Citizens are requested to inform themselves where the keys of the signal boxes are kept. A large number of boxes have been furnished with a key in an iron box with a glass front, which in a few cases had to be taken off on account of the boys breaking the glass so often.

COMPANIES RESPONDING TO TELEPHONE ALARMS.

District No. 1—North side of Hale's Brook west of B. & L. R. R. to and including Westford Street, to City line. Hose 2 and 9, Truck 2, and Chemical C.

District No. 2—North of Westford Street, west of B. & L. R. R., to Pawtucket Canal, to Merrimack River. Hose 2 and 8, Truck 2, and Chemical C.

District No. 3—North side of Pawtucket Canal, Fletcher Street to Merrimack River, Pawtucketville included. Hose 7 and 8, Truck 2, and Chemical B.

District No. 4—East side Fletcher Street commencing at Suffolk Street, through Suffolk, to Merrimack River, including Little Canada. Hose 7 and 8, Truck 3, and Chemical B.

District No. 5—East side of Suffolk Street, west of B. & L. R. R., through Dutton Street, to Merrimack River. Hose 3 and 8, Truck 3, and Chemical B.

District No. 6—Centralville. Hose 3 and 5, Truck 1, and Chemical B.

District No. 7—Belvidere. Hose 4 and 6, Truck 1, and Chemical B.

District No. 8—East side of Dutton Street and B. & L. R. R., to the canal, to Concord River. Hose 3 and 5, Truck 3, and Chemical B.

District No. 9—South side of Canal, through Central Street to Elm, to South, to Jackson Street. Hose 3 and 6, Truck 3, and Chemical B.

District No. 10—Warren Street to, but not including Central Street, to Wamesit, to Rogers, to Concord River. Hose 4 and 6, Truck 3, and Chemical B.

District No. 11—West side but not including South Street, to Highland, to B. & L. R. R. Hose 2 and 6, Truck 2 and Chemical B.

District No. 12—South side but including Highland, Elm, Wamesit and Rogers Street, to Concord River, east of B. & L. R. R., to City line. Hose 1 and 6, Chemical C, Truck 2 (except Lawrence Street, from Rogers, to Hapgood's Mattress Works).

District No. 13—South side of Hales Brook, west of B. & L. R. R., to City line. Hose 1 and 9, Truck 2, and Chemical C.

Truck 3 will respond to alarms on Lawrence Street from Rogers Street to Hapgood's Mattress Works.

The Protective Company will respond to all alarms.

ANNUAL REPORT

OF THE

SUPERINTENDENT OF STREET LIGHTS

OF THE

CITY OF LOWELL,

FOR THE YEAR 1890.

LOWELL, MASS.
DAILY NEWS JOB PRINT, HILDRETH BUILDING.
1891.

CITY OF LOWELL.

In Board of Aldermen, Feb. 10, 1891.

Received and ordered on file.

MICHAEL J. DOWD, City Clerk

REPORT.

LOWELL, January 1st, 1891.

To the Mayor and Board of Aldermen:—

GENTLEMEN:—Herein is submitted the Annual Report of the Superintendent of Street Lamps, for the year ending December 31st, 1890. The working force under the direction of the Superintendent (Chief of Fire Department) consists of eleven men, one of which acts as foreman. They have, in addition to their regular duties of lighting and cleaning the gas lamps, set and fitted up thirty-three gas and thirty gasoline posts, and have changed the location of and re-set thirty-five posts the past year.

There has been a new system of lighting and taking care of the gas lights the past year. The old way of hiring boys to light and the Police to put out, has been discontinued. July 1st, five men were added to this Department, which made a total of eleven, one of which was appointed foreman. There were ten districts laid out, contain-

ing from ninety to one hundred and six lights; each one of the other ten men was given a district to light, put out and keep clean, which so far has been a success, as the lamps are taken better care of and there are less frozen ones. The men report them as soon as they begin to freeze; also the same with a broken lantern—which the boys did not do—usually the only way we found out was a report from the Police; the pay roll also is a little smaller.

The location of the gas lights added the past year are as follows:—Lincoln street, five; Livingston avenue, three; West Third, Lawrence, Lane and Canton streets, two each; Mammoth avenue, Page, Gorham, Tanner, Linden, Race, Smith, Gates, Robbins, Coburn, Exeter, Meadowcroft and Leverett streets, one each.

There are at present 965 gas lights; in addition there are 39 lights owned and maintained by the different Corporations, the City paying for the gas consumed. These lights are lit and put out according to the time designated by a card issued by the Superintendent monthly. These lights average about seven hours per night, and they burn 4, 6, 12 and 18 feet an hour, according to location.

The Globe Gas Light Co., of Boston, agree by contract to furnish all lanterns and glass, and keep and maintain their lights in good order, with a

light equal to a five-foot gas burner, at six cents a light per night, they to have no less than twenty-five nights per month, and to burn until one o'clock. These lights, as a rule, are located on streets where there are no gas mains, and are replaced with gas as soon as the mains are laid in the street.

There are 433 Gasoline lights at present, 30 new ones have been added, and 7 have been replaced by gas lights the past year. The new ones are located as follows:—Middlesex place, Richards, Arthur and Fruit streets, three each; Llewellyn street, three; Middlesex road, Gershom and Lamb streets, two each; Christian, Aiken, Pine Hill, Kidder, Spencer, Rolfe, Mt. Hope, Gorham streets and Meadow road, one each.

The contract with the Electric Light Company expired last August, and a new contract made for three years; the City to pay forty cents a light for two hundred lights, all over that number, thirty-seven and one-half cents a light per night all night, and every night in the year. There are at present 179 lights. Twenty-seven more were located, but owing to the unavoidable delay in moving from the old to the new station, the Company could not furnish power enough to run only two of them; one of them is located at the corner of Warren and Hurd, and the other at the corner of Central and Williams streets. The other twenty-five are located as follows: 3 on Gorham street, 1

near the Court house, 1 near the Engine house, the other opposite Moore street; four on Moore street, 1 near the railroad crossing, 1 cor. Andrews street, 1 near Agawam street, the othet near the Methodist church; two on Westford street, 1 near the Highland church, the other corner of Wilder street; three on Chelmsford street, 2 of them between Grand street and Lincoln square, the other at the square; two on Smith street, 1 opposite Shaw Hosiery, the other corner of Liberty street; one on Thorndike street, opposite Hale street; one corner of Grove and Dover streets; one at the Park, on Third street; one corner Pine and Robbins streets; one junction of Pine and Liberty streets; one on Fayette street, opposite Chestnut; one corner West Bowers and School streets; one corner Broadway and Fletcher street; one corner Broadway and Wilder street; one corner Broadway and Rolfe street; the other on Andover street, opposite Hanover avenue. In addition there were 8 lights running on Fort Hill Park during the months of July and August and a part of September.

The whole number of lights up to date are:

Electric	179
Gas	965
Gasoline	433
	1,577

The following statement will show the Receipts and Expenditures:

RECEIPTS.

Appropriation		$55,000 00	
Received from other sources		36 50	
Transfer		1,250 38	
			$56,286 88

EXPENDITURES.

Pay Roll		$6,531 70	
Electric Light Co.			
Streets	$28,978 60		
Huntington Hall	452 00		
City Government Build'g	135 43		
		29,566 03	
Gas Light Company,			
Streets	$9,243 37		
Huntington and Jackson Halls	387 44		
City Government Build'g	613 25		
Armories	253 11		
Ward Rooms	27 59		
Dep't Headquarters	5 39		
		10,530 15	
Globe Gas Light Co		7,933 32	
Hay, Grain, Waste, Glass, Paint, Lanterns, Frames, Telephone, Water Works, Posts, Etc		1,725 68	
			$56,286 88

Schedule of Property belonging to the City under the charge of the Superintendent of Street Lamps, January 1st, 1891:

Nine hundred and sixty-five street lights and 140 lamp posts piped and capped ready for use, decapitated on account of electric lights, 433 wooden

posts and frames used for gasoline purposes, 1 horse, 2 wagons, 2 robes, 2 blankets, 2 sleighs, 3 harnesses, 25 lanterns, 10 ladders, 3 hammers, 5 frames, 1 air pump, 1 Johnson pump, 2 saws, 1 duster, 2 oil cans, 25 globes, 1-2 ton hay, 1 bale straw, 2 bushels of grain, 1 sixty-gallon oil tank, 1 match box, 6 gross of matches, 1 stove with boiler connection, 1 Colcord desk, 1 table, 1 spittoon, 1 coal hod, 5 shovels, 4 picks, 1 bar, 2 tamps, 3 monkey wrenches, 2 boxes of glass, 50 feet of 3-4-inch hose, 1 1-8, 1-2 and 3-4-inch dies, 3 pipe cutters and necessary pipe fittings, 5 globe frames, 1 diamond glass cutter, 1-4 ton of coal, 1 lantern, 5 Bray burners, 1 spirit level, 20 torches, 1 bath tub, 1 bench, 1 vise, 1 barrel of alcohol, 2 forks, 1 iron and 5 wooden posts, 2 doz. pipe fittings, etc.

The value of above property is about $25,000.00.

Respectfully submitted,

EDWARD S. HOSMER,
Superintendent.

ANNUAL REPORT

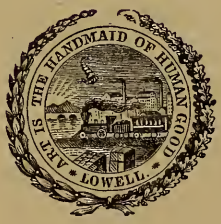
OF THE

POLICE DEPARTMENT,

OF THE

CITY OF LOWELL,

FOR THE YEAR 1890.



LOWELL, MASS.
DAILY NEWS JOB PRINT, HILDRETH BUILDING.
1891.

CITY OF LOWELL.

In Board of Aldermen, Jan. 2, 1891.

Received and ordered on file. Sent down for concurrence.

GIRARD P. DADMAN, City Clerk

In Common Council, Jan. 2, 1891.

Received and ordered on file, in concurrence.

DAVID CHASE, Clerk.

REPORT.

To the Honorable the Mayor and City Council of the City of Lowell:

GENTLEMEN,—I have the honor to submit this, my Annual Report of the Police Department of the City of Lowell, for the year commencing Dec. 1, 1889, and ending Nov. 30, 1890:

The force at present consists of seventy six regular and five supernumerary officers.

ROSTER OF THE FORCE.

CHIEF OF POLICE.

JACOB G. FAVOR.

DEPUTIES.

CHARLES HOWARD. GEORGE R. DAVIS.

INSPECTORS.

DANIEL M. HAYES. FRANK GOODWIN.
CHARLES LAFLAMME, GEORGE B. PALMER.

SERGEANTS.

JAMES E. WEBSTER JAMES DUNLAVY.
WILLIAM R. KEW.

WARRANT AND COURT OFFICERS.

William G. Bumps. Peter Cawley.
Isaac L. Libby.

KEEPERS.

James A. McQuade. James McLaughlin.

DAY PATROL.

Horace W. Clement.
Cornelius E. Collins.
John B. Crowley.
Henry Farrington.
Patrick Fitzpatrick.
William H. Grady.
Charles Gregg.
Enoch N. Grinnell.
Daniel W. Lane.
Albert E. Libby.
Alonzo J. Page.
Napoleon Provencher.
Chester E. Ryder.
Thomas J. Sanborn.
Redmond Welsh, Jr.

NIGHT PATROL.

Thomas E. Allen,
Edgar L. Bills,
Josiah S. Blood,
James Boyle,
Patrick H. Brady,
Eloi N. Breault,
James Brosnan,
Martin Connors,
Peter T. Corcoran,
John Creahin,
John J. Crowley,
John S. Dennett,
Hugh Downey,
John N. Dunfey,
Edward Fox,
John C. Furlong,
John F. Gallivan,
Willis L. Gardner,
David H. Goodhue,
John Hickson,
James E. Holland,
Alfred M. Holman,
Cornelius Howard,
John D. Hubin,
Thomas Ingalls,
Lindsay E. Ingalls,
William B. Jones,
Michael J. Lennon,
John R. Mackenzie,
George W. Marshall.
William McCarron,
Cormack McIntee,
John H. McKay,
James McNabb,
William B. Moffatt,
William H. O'Brien,
John O'Connell,
Peter F. O'Donnell,
Henry F. Quinn,
James Riley,
Hermon N. Tilton,
John A. Walsh,
John T. Whittaker,
Frank H. Whitney.

SUPERNUMERARIES.

JOHN BUCHANAN, FRANK FOX,
JAMES E. DOW, JOHN L. LEIGHTON,
FRANCIS E. MOORE.

DETAILED FOR SPECIAL DUTY,

MICHAEL E. MCDONALD.

DRIVERS OF PATROL WAGON,

JAMES W. KILBURN, JOHN W. TILTON.

POLICE MATRON,

MARGARET WALLACE.

Changes in the Department during the year have been as follows:

PROMOTIONS.

Feb. 4, Deputy Chief JACOB G. FAVOR to Chief of Police.
Feb. 11, Sergeant JAMES E. WEBSTER to Deputy Chief.
March 4, Sergeant GEORGE R. DAVIS to Deputy Chief.
Patrolman WILLIAM R, KEW to Sergeant.
Supernumerary JAMES BROSNAN to Patrolman.
Supernumerary HUGH DOWNEY to Patrolman.
Supernumerary JOHN F. GALLIVAN to Patrolman.
Supernumerary LINDSEY E. INGALLS to Patrolman.
Supernumerary WILLIAM H. O'BRIEN to Patrolman.
Supernumerary FRANK H. WHITNEY to Patrolman.

APPOINTMENT,

April 1, Supernumery JOHN BUCHANAN.

RESIGNATIONS.

Jan. 7, ALBERT F. ELLIOTT, Patrolman.
Feb. 4, EDWARD J. NOYES, Chief of Police.
Feb. 18, JAMES E. WEBSTER, Deputy Chief.
JOHN DURROUGH, Patrolman.

DISCHARGES.

March 4, CYRUS M. BEALS, Patrolman.
Sept, 2, DENNIS F. GALLIVAN, Patrolman.

DEATH.

Oct. 10, GEORGE F. DUNLAVY, Patrolman.

DISCIPLINE.

Five officers have been suspended from duty, for neglect of duty and violations of the rules of the Department. Some have been returned for duty after a few days, or weeks, suspension, and others have been brought before the Committee on Police for trial on charges preferred against them. There have been five hearings before the Committee on Police, and each defendant was given an opportunity to be heard personally, or represented by counsel, and to summon such witnesses as he choose in his own behalf. As a result of these hearings and the findings of the Committee, one Patrolman was allowed to resign while under suspension; two Patrolmen were exonerated, the charges not being sustained, and two Patrolmen were discharged from the force.

SUMMARY.

The following is a summary of the work of the Department from Dec. 1, 1889, to Nov. 30, 1890:

Whole number admitted for lodging	5040
Males	4992
Females	48
Foreigners	2403
Americans	2637
Minors	268
Non-Residents	4898
Colored	49
Whole number arrested	3846
Males	3088
Females	758

Foreigners	1599
Americans	2237
Minors	520
Non-Residents	637
Colored	10

CAUSES OF ARRESTS.

Adultery	7
Assault and Battery	189
Assault, Felonious	4
Assault on Officer	9
Arson	2
Bastardy	14
Baggage, Unlawfully Removing	10
Breaking and Entering	30
Breaking and Entering, Accessory	1
Breaking Glass	7
Burial without Permit	1
Butter Law, Violation of	1
Capias for Default	28
Capias from Superior Court	9
Causing False Alarm of Fire	1
Cruelty to Animals	3
Concealed Weapons, Carrying	2
Drunkenness, Simple	1911
Drunkenness, 2d Offence	476
Dog, Keeping Unlicensed	2
Drunkenness, 3d Offence	199
Drunkard, Common	52
Discharging Firearms	1
Distributing Handbills	4
Disturbing the Peace	11
Delirium Tremens	9
Embezzlement	18
Escaped Prisoner	8
Evading Car Fare	3
Family, Neglect to Support	29
Fast Driving	1
Food Law, Violation of	8

Forgery	9	
Fornication	7	
False Pretenses, Obtaining Money by	9	
False Answers to Stable Keepers	2	
Horse, Unlawfully Taking and Driving	8	
Health Law, Violation of	3	
Held as a Witness	1	
Illegally Transporting Liquors	3	
Indecent Exposure of Person	1	
Insane	15	
Keeping Unlicensed Inn	1	
Larceny	209	
Larceny from the Person	4	
Larceny from a Building	1	
Lewd and Lascivious	2	
Liquor, Unlawfully Keeping	111	
Liquor Nuisance	50	
Liquor, Unlawful Sale	10	
Liquor, Unlawful Sale to Minor	1	
Liquor Seizures		123
Lord's Day, Violation of	8	
Lord's Day, Playing Game on	13	
Mortgaged Property, Conveying	3	
Mortgaged Property, Concealing	6	
Malicious Mischief	15	
Murder	1	
Milk Law, Violation of	11	
Obstructing Railroad	1	
Polygamy	1	
Peddling without License	8	
Railer and Brawler	1	
Rape, Attempt	2	
Receiving Stolen Goods	8	
Robbery	1	
Seduction	1	
Streets, Obstructing	19	
Stubborn Children	44	
Surrendered by Bondsman	1	
Suspicious Persons	81	
Safe Keeping	5	

Threatening Language	12
Trespass, Wilful	1
Truancy	28
Vagrancy	8
Violation of Labor Law	3
Violation of Game Law	1
Wandering About Streets	50

PROSECUTIONS.

Adultery	7
Assault and Battery	184
Assault, Felonious	4
Assault on Officer	6
Arson	2
Bastardy	11
Baggage, Unlawfully Removing	10
Breaking and Entering	28
Breaking and Entering, Accessory	1
Breaking Glass	7
Burial without Permit	1
Butter Law, Violation of	1
Capias for Default	20
Cruelty to Animals	3
Concealed Weapons, Carrying	2
Drunkenness, Simple	1733
Drunkenness, 2d Offence	477
Drunkenness, 3d Offence	192
Drunkard, Common	54
Discharging Firearms	3
Distributing Handbills	4
Disturbing the Peace	11
Embezzlement	18
Escaped Prisoner	4
Evading Car Fare	3
Family, Neglect to Support	31
Fast Driving	1
Food Law, Violation of	5
Forgery	6
False Pretenses, Obtaining Money by	4

False Answers to Stable Keepers	1
Horse, Unlawfully Taking and Driving	8
Health Law, Violation of	1
Held as a Witness	1
Illegally Transporting Liquors	3
Indecent Exposure of Person	1
Insane	2
Keeping Unlicensed Inn	1
Larceny	179
Larceny from the Person	5
Lewd and Lascivious	2
Liquor, Unlawfully Keeping	110
Liquor Nuisance	50
Liquor, Unlawful Sale	10
Liquor, Unlawful Sale to Minor	1
Lord's Day, Violation of	8
Lord's Day, Playing Game on	11
Mortgaged Property, Conveying	4
Mortgaged Property, Concealing	7
Malicious Mischief	13
Murder	1
Milk Law, Violation of	9
Obstructing Railroad	1
Polygamy	1
Peddling without License	6
Railer and Brawler	2
Rape, Attempt	2
Receiving Stolen Goods	6
Seduction	1
Streets, Obstructing	19
Stubborn Children	44
Surrendered by Bondsman	1
Threatening Language	12
Trespass, Wilful	1
Truancy	28
Vagrancy	8
Violation of Game Law	1
Violation of Labor Law	3
Wandering About Streets	50

Whole number found Not Guilty, and discharged by Court.. 78

FOR THE FOLLOWING OFFENCES:

Assault and Battery	33
Bastardy	1
Breaking and Entering	1
Breaking Glass	3
Drunkenness	6
Embezzlement	1
Keeping Liquor	9
Larceny	12
Non-Support	4
Illegally Removing Baggage	2
Threatening	5
Vagrant	1
Whole Number of City Ordinance Cases	112

FOR THE FOLLOWING OFFENCES:

Truancy	37
Wandering About Street	43
Fast Driving	1
Obstructing Street	27
Distributing Handbills	4

MISCELLANEOUS REPORTS.

Defective Streets and Sidewalks	367
Defective Lamps and Burners	769
Obstructions Removed from Streets	161
Assisted Home Drunk	230
Disturbances Quelled Without Arrest	244
Lost Children Restored to Parents	92
Stray Teams put up at Stables	58
Store Doors Found Open and Secured	401
Amount of Money taken from and returned to Persons committed	$5,149 19
Warrant Officers' Fees	$9,011 37

FINANCIAL STATEMENT.

Balance Jan. 1, 1890	
Appropriations	$75,000 00
Loan	3,750 00
Transfers	5,123 27
Received from other sources	15,966 05
	$99,839 32
Expenditures	99,839 32
Balance Dec. 31, 1890	

The past year has been an active one for the members of the Police Department, as may be inferred from the large number of arrests and prosecutions.

Most of the arrests and prosecutions have been for minor offences, and the peace and good order of the city has been generally maintained, no serious disturbances or outbreaks having occurred. Notwithstanding the many barriers thrown in the way of the Police, an honest effort has been made to enforce the laws and bring offenders to the bar of justice.

Neither time or distance has prevented the pursuit of criminals, several having been overtaken and brought back from other cities and states and punished for their offences.

LIQUOR PROSECUTIONS.

The duty of properly enforcing the various provisions of law regulating the keeping and sale of intoxicating liquors is one of considerable difficulty.

Inspectors Goodwin and Palmer, who have been specially assigned to this duty, have had the assistance of Patrolman Donaldson and Warrant Officer Bumps, the former being detailed May 17, and the latter Nov. 26.

Many violations of the law have been detected and reported by them. The large number of prosecutions and convictions before the Police Court for this offence, is evidence that an effort has been made to suppress the traffic as prescribed by law.

The Inspectors have served 402 search warrants and made 123 seizures, netting 1190 gallons of liquors. There has been 174 prosecutions made in the Police Court, and only 9 defendants were found not guilty.

The fines in these cases amounted to $12,145; costs, $1,162.76; fees, $279.37; making a total of $13,603.13.

In the above statistics no account has been taken of the prosecutions made by persons outside of the department.

Inspectors Hayes and Laflamme have rendered valuable services in the detective department, and have had unlimited success in the detection and arrest of criminals.

THE POLICE SIGNAL SYSTEM.

During the past year the efficiency of the department has been greatly added to by the intro-

duction of the Gamewell Police Telephone and Signal System. There are fifty street signal boxes, and a complete four-circuit central office plant at the police station, together with connections to the patrol wagon house. The apparatus is substantially and beautifully made and has already proved of great service to the department. It went into service early in December, and has thus far fulfilled all that was promised on its behalf. The large territory which the patrolmen are obliged to cover, will render it desirable, at an early day, to have additional street signal boxes.

Already it has been shown that the Police Department Stable is not large enough to accommodate the teams used by the department. Additional room for the wagons and carriages is needed only, the apartments for horses being sufficient in number for the present.

CONCLUSION.

The discipline of the department is good, and a prompt and cheerful obedience to orders and regulations prevails.

In conclusion I desire to extend my thanks to Deputies Howard and Davis, and to all the members of the department, for faithful and efficient service, as to their efforts I attribute much of the success we have been able to achieve.

OBITUARY.

George F. Dunlavy,

DIED OCTOBER 10, 1890.

He was born in Lowell, in 1846. He was appointed a member of the Police Department December 4, 1880. He was an intelligent and efficient officer, popular with the general public, and loved and respected by the members of the force.

To his Honor Mayor Palmer, and to Aldermen Sawyer, Carter and Fletcher, of the Committee on Police, I am under many obligations for their hearty support of all my efforts to improve the service and maintain a high standard of efficiency and discipline in the department.

I also extend my thanks to Hon. Samuel P. Hadley, Justice, and to James F. Savage and Edward W. Trull, Clerk and Assistant Clerk, respectively, of the Police Court, for valuable counsel and their uniform courtesy in dealing with the department.

Respectfully submitted,

JACOB G. FAVOR,

Chief of Police.

ANNUAL REPORT

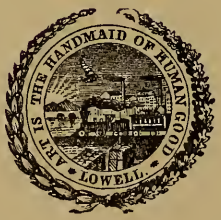
OF THE

TRUSTEES

OF THE

City Library of Lowell,

FOR THE YEAR 1890.



LOWELL, MASS.
DAILY NEWS JOB PRINT, HILDRETH BUILDING.
1891.

CITY OF LOWELL.

In Board of Aldermen, Jan. 2, 1891.

Received and ordered on file. Sent down for concurrence.

GIRARD P. DADMAN, City Clerk.

In Common Council, Jan. 2, 1891.

Received and ordered on file, in concurrence.

DAVID CHASE, Clerk.

Administration of the City Library, 1890.

BOARD OF TRUSTEES.

CHARLES D. PALMER, Mayor of the City.
GEORGE F. RICHARDSON, STEPHEN J. JOHNSON,
FRANK P. PUTNAM, LARKIN T. TRULL.
THOMAS WALSH.

LIBRARIAN.

CHARLES H. BURBANK.

ASSISTANT LIBRARIAN.

HARRIET F. HILL.

ASSISTANTS.

WALTER H. GILMAN, STEPHEN T. WYMAN,
CLARA BEARD, FLORENCE M. WASHBURN,
MARION R. BROWN, ALICE M. MYERS,
ROGER L. WALKER.

SUPERINTENDENT OF READING-ROOM.

EDWARD F. SLATTERY.

JANITOR.

WILLIAM R. MYERS.

REPORT OF THE TRUSTEES.

LOWELL, Dec. 27, 1890.

To the City Council of the City of Lowell:

At the meeting for organization of the Board of Trustees, on the Second Monday of January, Hon. George F. Richardson was re-elected Vice-President, and Larkin T. Trull, Esq., was re-elected clerk.

Mr. Charles H. Burbank has been retained as Librarian, and no very important change in his assistants has been found necessary.

The following financial statement will show the amount and sources of the receipts for the Library and also the direction in which they were expended.

RECEIPTS.

Balance from 1889, $538.56, transferred to Public Buildings.

Appropriations by City Council	$13,000 00
Dog licenses	3,380 10
Fines	305 16
Sale of catalogues	54 30
Lost and damaged books	12 88
Non-resident subscribers	17 00
All other sources	11 96
	$16,781 40

EXPENDITURES.

Salaries	$6,407 54
Rent and heating library and reading room	2,360 40
Lighting	1,237 73
Books	2,746 02
Periodicals 1890	684 95
Periodicals 1891	697 80
Binding	487 77
Insurance	345 97
All other expenses	857 77
Balance	955 85
	$16,781 40

In the purchase of books for the Library, the Trustees endeavor to give the literary tastes of the public constant consideration, and they welcome any suggestions which will extend the usefulness of the institution. During the year a goodly number of scientific works have been purchased, treating upon subjects which are of special interest to those who are connected in various ways with the manufacturing establishments of the city.

The use of the Library is made as free and agreeable as good order and regulation will allow, and the employees are expected, as far as practicable to give their personal attention to any who seek information from the Library and to aid them in finding out the advantages it offers. The tables which are made part of this report, if examined, will disclose a very satisfactory increase in the use of the Library, both in the circulation and reference departments.

The fact that there are sixteen thousand six hundred and sixty-six registered borrowers, that the average monthly circulation is eight thousand six hundred and five, and that nine thousand eight hundred and six reference books were consulted, is proof enough that the advantages offered by our city's Library are appreciated, and it is an encouragement to give it liberal support.

The second section of the finding list, embracing Natural Science, Useful Arts, Fine Arts and Literature has been completed, and was placed on sale in the summer. The third section, including Biography, Genealogy and History, will soon be ready for the press.

The Reading Rooms have been under the immediate care of Edward F. Slattery during the year, and he reports the average number of persons who avail themselves daily of the privileges of the rooms to be about six hundred.

The Trustees realize that the accommodations are somewhat inadequate, but consider it hardly advisable to make any change, as the new Library Building is likely to be ready for use before many months, where ample room is planned for this department.

"The Cosmopolitan," "Arena," "American Journal of Psychology," "Popular Educator," "Teachers' Institute," and "Revue de deux monde," are some of the periodicals which have been added this year to the list of reading matter.

Very many friends of the Library have presented it with one or more volumes relating to a variety of subjects, for which the Trustees are grateful.

Respectfully submitted

CHARLES D. PALMER,
GEORGE F. RICHARDSON,
FRANK P. PUTNAM,
THOMAS WALSH,
STEPHEN J. JOHNSON,
LARKIN T. TRULL,
Trustees.

Condition of the Library.

Volumes purchased	1,934
Volumes added by gift	113
Volumes added by binding periodicals	151
Worn-out books replaced	140
Cost of same	$85.38
Total number of volumes added	2,050
Total number of volumes in the library	40,301
Volumes lost and not paid for	9
Estimated value of the same	$6.83
Periodicals and papers subscribed for	175
Periodicals and papers given	27
Total number of papers and periodicals	202
Number of volumes used, home and reference	103,261
Number of volumes consulted in reference room	9,806
Number of post cards sent to delinquents	1,094
Applications received during the year	1,282
Applicants who did not call for cards	136
Names registered during the year	1,146
Cards withdrawn for non-payment of fines, removals, etc.	1,385
Number of names registered December 20, 1889.	15,520
Total registered to date	16,666

Classified Contents of the Library.

General Works	2,797	Useful Arts	1,730
Periodicals	1,854	Fine Arts	1,390
Polygraphy	601	General Literature	4,423
Bibliography	319	Fiction	7,696
Philosophy	792	History, including Travel and Description	7,696
Religion	2,847	Biography	3,769
Sociology	2,231		
Philology	316		
Natural Science	1,840	Total number volumes	40,301

Percentage of fiction to all other classes, 19.1

Classified List of Accessions, 1890.

General Works	34	Fine Arts	92
Periodicals	145	General Literature	252
Massachusetts History	32	Fiction	381
Philosophy	41	History, including Travel and Description	337
Religion	187	Biography	203
Sociology	125		
Natural Science	106		
Philology	14	Total accessions	2,050
Useful Arts	101		

List of Donors to the Library, 1890.

NAMES.	Pamphlets	Volumes.
Allen, Hon. Chas. H.		32
American Humane Society	1	
Amherst College	2	
Anonymous	4	
Astor Library	1	
Ayer, J C Co.		3
Bakes, Rev Thomas	1	
Ballantyne, J. F.		1
Bangor Public Library	1	
Boston & Maine R. R.		3
Boston, City of		2
Boston Photographic Review	1	
Boston Public Library	5	
Bradlee, Rev. Caleb D.	4	
Brookline Public Library		1
Brooklyn Library	2	
Buffalo Historical Society	1	
Buffalo Public Library	1	
Burbank. C. H.		3
Cable, George W.	1	
Cambridge Public Library	1	
Central Park Managerie	1	
Chase, Rev. J. A.	1	
Chicago Public Library	12	
Children's Hospital, Boston	1	
Church Library Association	1	
Cincinnati Chamber of Commerce		1
Cincinnati Public Library	7	
Citizen's Association of Boston	2	
Clark Institution for Deaf Mutes	1	
Colby, J. S.	1	
Concord, N. H., Public Library	1	
Cornell University	1	
Cust, Robert N.		8
Carried forward	55	54

NAMES.	Pamphlets	Volumes
Brought forward	55	54
Davis, Rev. A. Q	2	
Dawson, C C. (Miscellaneous Collection)		
Denison, Texas, Board of Trade	1	
Denver, Colorado, Public Library	2	
Detroit Public Library	1	
Dover Public Library		1
Enoch Pratt Free Library, Baltimore	4	
Fall River Public Library	1	
Fletcher Free Library, Burlington, Vt.	1	
Gibson, John I.	1	
Grand Rapids, Michigan, Public Library	1	
Green, Samuel A., M. D.	9	
Greene, John M., M. D.		37
Griffis, Rev. Wm. E.		1
Hamilton, Ontario, Public Library	2	
Harvard University	2	
Hartford Library Association	8	
Hegeler, E. C.	2	
Hooper, S. K.	1	1
Hoquiam, Washington, Board of Trade		1
Howell, T. C.	2	
Huse, S. W. & Co.	1	
Hutchins, Rev. Charles L.		2
Hutchinson, C. C.		1
Ingersoll, Edward		1
Irish, J. C., M. D.		19
Ivison, Blakeman & Co.		1
Kearney, J. S.		1
Kremer, J. B.	1	
Larremore, Wilbur		1
Lawrence Free Public Library	3	
Lawrence, Dr. Samuel S.	1	
Lowell Commercial College	1	
Lynn Public Library	1	
McKnight, D. A.		1
Maimonides Library, N. Y.	1	
Malden Public Library	1	
Manchester City Library	1	
Massachusetts, New Church Union.	1	
Massachusetts, State Library	1	
Michigan State Board of Health	3	
Carried forward	111	122

NAMES.	Pamphlets	Volumes
Brought forward	111	122
Miller, J. Bleeker		1
Milwaukee Public Library	1	
Minneapolis Public Library	4	
Munroe A. C.	1	
Nevins Memorial Library, Methuen	1	
Newark Free Public Library	7	
New Bedford Free Public Library	2	
Newberry Library, Chicago	1	
Newburyport Public Library	1	
New Jersy State Library	1	
Newton Free Library	1	
New York Mercantile Library	1	
Old Residents' Historical Society, Lowell	1	
Palmer, Hon. C. D.	1	
Paterson Free Public Library	1	
Peirce, Hon. Henry B.	3	4
Pennsylvania Historical Society		1
Peoria, Ill., Public Library	1	
Philadelphia Library Co.	2	
Philadelphia Mercantile Library	2	
Pinkham, George E., M. D.	2	
Poor, H. V. & H. W.	2	
Portland Library	2	
Pratt Institute, Brooklyn	1	
Providence Public Library		1
Putnam, Frank P.		1
Richardson, Mrs. D. S.		2
St. Louis Public Library	1	
Salem Public Library	4	
San Francisco Free Public Library	1	
San Francisco Mercantile Library Association	1	
Santa Monica Outlook		1
Sawin, J P.	1	
Springfield City Library	6	
Swansea, Wales, Public Library	1	
Taunton Public Library	1	
Toledo Public Library	1	
Trinity Medical College, Toronto	1	
Trull, Larkin T.	1	
Tucke, Hon. E. M.	15	
Tufts College	2	
United States, Board of Agriculture.	12	4
Carried forward	198	137

NAMES.	Pamphlets	Volumes
Brought forward	198	137
United States Department of the Interior .	11	4
Department of State . .	16	5
Fish Commission . . .		3
Interstate Commerce Commission		1
Patent Office		4
Signal Service		9
Smithsonian Institute . .		5
Treasury Department . .	1	3
War Department . . .	1	10
United States Hotel, Boston	1	
Waddie, John		2
Washingtonion Home.	1	
Waterhouse, S.	7	
Wilford. Woodruff		1
Wisconsin Historical Society	1	
Woburn Public Library	1	
Women's Medical College, Philadelphia . .	1	
Worcester Polytechnic Institute . . .	1	
Worcester Public Library	1	1
Total	241	185

Library open 306 days	
Average monthly circulation	8,605
Average weekly circulation	1,986
Average daily circulation	337
Largest monthly circulation (March)	11,327
Smallest monthly circulation (July)	6,326
Largest daily circulation (February 1)	850
Smallest daily circulation (July 15)	103
Percentage of Fiction read	.71
Percentage of other classes	.29

Classified Circulation in Reference Department.

MONTH.	General Works.	Periodicals.	Philosophy.	Religion.	Sociology.	Philology.	Natural Science.	Useful Arts.	Fine Arts.	Gen'l Literature	History.	Biography.	Total.
December, 1889	2	17	1	9	16	1	15	19	42	33	80	10	245
January, 1890	58	99	44	104	131	8	59	84	158	235	203	127	1310
February	7	47	57	78	94	17	127	88	105	157	160	110	1047
March	13	54	30	116	98	14	40	70	60	248	161	106	1010
April		34	12	89	43	1	44	41	45	87	111	70	577
May	3	29	63	73	70	5	33	65	62	200	116	131	850
June		34	13	45	36	1	53	35	24	93	77	61	472
July		28	9	85	25		57	50	65	100	129	41	589
August	17	57	62	84	68		89	35	39	82	217	43	793
September	1	77	18	85	49	18	53	52	54	123	165	80	775
October	15	54	49	60	28	13	61	55	55	114	174	83	761
November	8	34	60	44	44	2	56	62	81	177	118	86	772
December		18	18	45	33	7	64	41	38	197	113	31	605
Total	124	582	436	917	735	87	751	697	828	1846	1824	979	9806

Classified Circulation from Dec. 20, 1889, to Dec. 20, 1890.

MONTH.	General Works.	Periodicals.	Philosophy.	Religion.	Sociology.	Philology.	Natural Science.	Useful Arts.	Fine Arts.	Gen'l Literature.	Fiction.	History.	Biography.	Reference.	Total.
December, 1889 -	2	55	8	22	23	9	35	39	50	169	2373	158	68	245	3256
January, 1890 -	1	151	36	76	77	10	104	169	211	553	7453	472	193	1310	10,816
February - -	5	107	71	62	90	19	156	145	166	551	6826	564	197	1047	10,006
March - - -	2	156	27	78	109	11	170	189	228	594	7963	518	272	1010	11,327
April - - -		110	32	81	85	7	144	151	201	404	6862	458	148	577	9260
May - - -	4	102	19	69	82	15	89	126	138	420	6087	409	159	850	8569
June - - -	2	96	37	56	55	8	76	84	139	312	5178	287	82	472	6884
July - - -		79	35	57	31	2	68	81	91	279	4691	234	90	589	6327
August - -	4	77	35	54	47	7	94	103	116	359	4905	292	105	793	6991
September - -	1	78	18	45	57	9	102	154	144	335	5151	331	138	775	7338
October - -	1	116	28	56	43	13	113	208	190	446	5425	401	124	761	7925
November - -		123	19	59	73	4	144	151	173	479	6188	377	153	772	8715
December - -		100	17	38	39	5	88	110	106	275	4167	220	77	605	5847
Total .	22	1350	382	753	811	119	1383	1710	1953	5176	73,269	4721	1806	9806	10,3261

ANNUAL REPORT

OF THE

CITY SOLICITOR

OF THE

CITY OF LOWELL

FOR THE YEAR 1890.

LOWELL, MASS.:
MORNING MAIL PRINT, 147 CENTRAL STREET,
1891.

CITY OF LOWELL.

In Board of Aldermen, March 3, 1891.

Received and ordered on file, sent down for concurrence.

MICHAEL J. DOWD,

City Clerk.

In Common Council, April 14, 1891.

Received and ordered on file, in concurrence.

DAVID CHASE,

Clerk.

REPORT.

LOWELL, MASS., February 28, 1891.

To the City Council of Lowell:

I offer the following report of the business of my office as City Solicitor for the past year:

1. LORENZO PRINCE v. CITY OF LOWELL.

This was an action in tort brought to recover damages for personal injuries alleged to have been sustained by being thrown out of a carriage in motion because of a defect on River Street. The action was tried and a verdict rendered for the defendant.

2. NELSON BROOKS v. CITY OF LOWELL.

This was an action in tort to recover damages alleged to have been caused at the same time and place and in the same manner as those in Prince v. Lowell, *supra*. This action was tried and verdict rendered for the defendant.

3. WILLIAM P. FOYE v. CITY OF LOWELL.

Petition for sherriff's jury to assess demages caused by the laying out of Palmer Street, between Middle and Market Streets. Verdict for petitioner, $9.577.86.

4. GEORGE A. CHASE v. CITY OF LOWELL.

MERRIMACK RIVER SAVINGS BANK v. CITY OF LOWELL.

As will be seen by reference to the report of last year, exceptions were taken at the trial of these two cases in the Superior Court and they were argued. The Supreme Judicial Court has, during the

year, handed down lengthy opinions overruling the exceptions in each case.

5. Lowell Institution for Savings v. City of Lowell.

Bill in Equity brought in the Supreme Judicial Court, praying that the City be enjoined from erecting any building upon a certain piece of land in the rear of the City Hall building and adjoining real estate of plaintiff on Middle Street. The land was deeded to the City of Lowell by the Proprietors of the Locks and Canals on Merrimack River; the deed containing the condition that no building should ever be erected on the premises. The grantors, in 1874, released the above condition to the City. The plaintiff, having purchased the adjoining lot of the same grantee, claims an equitable easement in the condition. Hearing before Holmes, J., who, though finding for the defendant, reported the case to the full Court. The argument has been made but no decision has as yet been rendered.

6. Emma N. White, Gdn., v. City of Lowell.

Emma N. White v. City of Lowell.

The first of these cases was a petition for a jury to assess damages for injuries sustained to property of petitioner in the construction and maintenance of the Pawtucketville sewer so-called.

The second was a bill in Equity alleging in substance that the Pawtucketville sewer was a nuisance and praying for damages and that the City be enjoined from continuing to use it as a sewer.

The first case was settled without trial on the payment of $850, and the second was dismissed by agreement.

7. Michael Horan v. City of Lowell.

Petition for a jury to assess damages for taking of land for Palmer Street, between Middle and Market Streets. Settlement was made without trial for $12,000.

8. Rosa Foley v. City of Lowell.

Action in tort brought to recover for personal injuries alleged to have been received by reason of a defect in the street. By agreement judgment has been entered for the defendant.

9. In the Case of Middlesex Company v. City of Lowell

Relating to the deposits of sewerage into the Middlesex pond of the Andover and Pond Streets sewers, Holmes, J., has made a decree directing the City to make other disposition of the sewerage before November 1st, 1891.

10. The Supreme Judicial Court has given a comprehensive opinion on the questions raised in the 1887 corporation tax cases, referred to in my report of last year. The decision of the Court disposes of a number of matters in dispute which were of great importance to the City. Much progress has been made by the Board of Assessors in settlement of the petitions of the corporations for abatement of taxes assessed subsequent to 1887.

The following cases are now pending against the City.

Middlesex Company v. City of Lowell (relating to intercepting sewer).

Middlesex Company v. City of Lowell (relating to the boundary line of land of the city bordering on the Mill Pond of plaintiff in Concord River).

John M. Pevey v. City of Lowell.

Solomon Bachman v. City of Lowell.

Ann Ashworth v. City of Lowell.

Cyrus Johnson v. City of Lowell.

Henry E. Parker v. City of Lowell.

Ann Donohoe v. City of Lowell.

Henry A. Hildreth v. City of Lowell.

Bernard Riley v. City of Lowell.

J. M. G. Parker v. City of Lowell.

Levi Milner v. City of Lowell.

John Holden v. City of Lowell.

Patrick Mungovan v. City of Lowell.

Ferdinand Bent v. City of Lowell.

Alfred Gosselin v. City of Lowell.

Mary N. Langley v. City of Lowell.

Charles H. Whitney v. City of Lowell.
Addison Hadley v. City of Lowell.
Etta F. Knowlton v. City of Lowell.
Mary St. John v. City of Lowell.
Eliza G. Randall v. City of Lowell.
Michael R. Slavin v. City of Lowell.
Daniel W. Darling *et al.* v. City of Lowell.

Respectfully submitted,

LARKIN T. TRULL,

City Solicitor.

ANNUAL REPORT

OF THE

SUPERINTENDENT

OF

CITY SCALES

AND

MEASURER OF WOOD AND BARK

OF THE

CITY OF LOWELL

FOR THE YEAR 1890.

LOWELL, MASS.
CITIZEN NEWSPAPER COMPANY, PRINTERS.
1891.

In Board of Aldermen, Jan. 20, 1891.

Read and ordered on file.

MICHAEL J. DOWD,

City Clerk.

REPORT.

To the Honorable Mayor and Board of Aldermen:

In compliance with an ordinance requiring the Superintendent of City Scales to report annually, I have the honor to submit the following report for the year 1890:

I have during the year weighed

		Tons.	Lbs.
1058	loads of hay	1008	96
205	" straw	162	940
75	" coal	182	1080
42	" hide	83	570
25	" iron	4	783
12	" ice	28	1027
17	" paper	22	75
18	" potatoes	12	560
18	" excelsior	2	1228
8	" rags	3	1520
7	" grain	8	1985
5	" squash	8	165
3	" corn	2	710
2	" lead	1	1140
1	" salt	1	1910
1	" bagging	1	790
6	" dressed hogs		1970
1	" baggage		1750
1	" copper		1600
187	horses		

Received for fees for weighing, $342.90.

RICHARD J. NOONAN,

Supt. of City Scales.

REPORT

Of the measurer of wood and bark for the year 1890.

I have during the year measured

			Cords.	Feet
2980	loads of	wood - - - - - -	3412	6 3-4
233	"	manure - - - - -	209	7 1-2
1	"	charcoal - - - - -	142	bushels.

Received for fees for measuring, $158.80.

RICHARD J. NOONAN,

Measurer.

ANNUAL REPORT

OF THE

SEALER OF WEIGHTS AND MEASURES

OF THE

CITY OF LOWELL

FOR THE YEAR 1890.



LOWELL, MASS.:
MORNING MAIL PRINT, 147 CENTRAL STREET,
1891.

CITY OF LOWELL.

In Board of Aldermen, January 2, 1891.

Received and ordered on file.

GIRARD P. DADMAN,

City Clerk.

REPORT.

OFFICE OF SEALER OF WEIGHTS AND MEASURES,
No. 70 MARKET STREET.

LOWELL, December 31, 1890.

To the Honorable the Mayor and Board of Aldermen:

GENTLEMEN — I herewith respectfully submit the following annual report. I have inspected and sealed scales, weights and measures as follows:

19 Hay and Coal Scales.
421 Platform and Dormant Scales.
354 Counter Scales.
10 Cotton Scales.
3452 Weights.
176 Wet and 65 Dry Measures.

I have condemned

3 Platform and 7 Counter Scales.
11 Spring Balances, 71 Weights, and 12 Wet Measures.

Received for fees		$292 75
Paid for teaming	$48 25	
for repairing drill	1 30	
for a new weight	60	
		50 15
		$242 60

Which I have paid to the City Treasurer.

JAMES R. FULTON,
City Sealer.

CITY DOCUMENT, 1890.

SALARIES OF THE OFFICERS

OF THE

CITY OF LOWELL,

FOR THE YEAR 1891.

LOWELL, MASS.
VOX POPULI PRESS, 130 CENTRAL STREET.
1891.

CITY OF LOWELL.

In the year eighteen hundred and ninety.

RESOLUTION

ESTABLISHING THE SALARIES OF OFFICERS OF THE CITY OF LOWELL FOR THE YEAR 1891.

RESOLVED by the Board of Aldermen and Common Council of the City of Lowell, in City Council assembled, as follows:—

The salaries of the several city officers for the year beginning on the first day of January and ending on the thirty-first day of December, one thousand eight hundred and ninety-one, shall be at the rate herein mentioned; to be paid monthly, unless herein otherwise ordered.

Mayor. SECTION 1. The salary of the MAYOR shall be at the rate of two thousand dollars per annum.

City Clerk. SECT. 2. The salary of the CITY CLERK shall be at the rate of eighteen hundred dollars per annum.

City Treasurer. SECT. 3. The salary of the CITY TREASURER shall be at the rate of twenty-five hundred dol-

lars per annum, for performing the duties of City Treasurer and Collector of Taxes. He shall annually give a bond in the sum of fifty thousand dollars, with good and sufficient sureties, satisfactory to the Mayor and Aldermen, for the faithful performance of his duties, and to account for all sums of money received in the sales of Water Bonds, and the collection of Water Rates, and in the capacity of City Treasurer and Collector of Taxes.

Auditor of Accounts.

SECT. 4. The salary of the AUDITOR OF ACCOUNTS shall be at the rate of fifteen hundred and fifty dollars per annum.

City Solicitor.

SECT. 5. The salary of the CITY SOLICITOR shall be at the rate of seventeen hundred dollars per annum, which shall be in full for all services rendered the city.

Civil Engineer.

SECT. 6. The salary of the CIVIL ENGINEER shall be at the rate of twenty-five hundred dollars per annum, which shall be in full for services as Civil Engineer and Engineer of the Water Board; and he shall devote his whole time to the service of the city. He shall be allowed such assistance as the Chairman of the Joint Standing Committee on Streets, the Chairman of the Standing Committee on Sewers, and the President of the Lowell Water Board may determine.

City Physician.

SECT. 7. The salary of the CITY PHYSICIAN shall be at the rate of seven hundred dollars

per annum, which shall be in full for all services rendered the city, including his duties as a member of the Board of Health.

Clerk of the Common Council.

SECT. 8. The salary of the CLERK OF THE COMMON COUNCIL shall be at the rate of two hundred and fifty dollars per annum.

City Messenger.

SECT. 9. The salary of the CITY MESSENGER shall be at the rate of eleven hundred dollars per annum.

Measurer of Wood and Bark.

SECT. 10. The salary of the MEASURER OF WOOD AND BARK, in the rear of the Market-house building, shall be at the rate of six hundred dollars per annum; and he shall account for all fees received by him in his official capacity; shall pay the same into the treasury monthly, and at the same time make a report of the amount so paid to the Auditor of Accounts; and also shall be required to devote, daily, to his duty such time as the Mayor may direct. The salary of any additional measurers of wood and bark shall be at such rate as the Mayor and Aldermen may, from time to time, determine; *provided*, that the same shall not exceed the amount of fees received.

President of the Lowell Water Board.

SECT. 11. The salary of the PRESIDENT OF THE LOWELL WATER BOARD shall be at the rate of four hundred dollars per annum.

SECT. 12. The Joint Committee on Accounts and the Joint Committee on Finance may provide such clerical assistance in the offices of the

City Clerk, City Treasurer, Auditor of Accounts, and Assessors of Taxes, as may be necessary, the expense thereof to be charged to the Reserved Fund. The Committee on State Aid may provide such clerical assistance as may be necessary in the distribution of State Aid, the expense thereof to be charged to the Reserved Fund.

POLICE.

Chief of Police.

SECT. 13. The salary of the CHIEF OF POLICE shall be at the rate of eighteen hundred dollars per annum.

Deputy Chiefs

SECT. 14. The salaries of the DEPUTY CHIEFS shall be at the rate of fourteen hundred dollars per annum each; payable weekly.

The salaries of the INSPECTORS OF POLICE, detailed for detective duty, shall be at the rate of twelve hundred dollars per annum each; payable weekly.

The compensation of the SERGEANTS OF POLICE, and INSPECTORS detailed for liquor duty, shall be at the rate of three dollars per day each; payable weekly.

Day and Night Police Officers

The compensation of DAY and NIGHT POLICE OFFICERS shall be at the rate of two dollars and seventy-five cents per day each; payable weekly.

Matron of the Police Station

The compensation of the MATRON OF THE POLICE STATION shall be at the rate of four hundred dollars per annum; payable weekly.

SECT. 15. All fees received by the officers mentioned in the two preceding sections, for attendance as witnesses, or for any other service in an official capacity, shall be paid by the officer receiving the same to the City Treasurer; and said officer shall, at the same time, report to the Auditor of Accounts the amount thus paid; *provided*, however, that said officers need not account for any fees for travel and attendance before the Supreme Judicial and Superior Courts as witnesses.

The Standing Justice of the Police Court of Lowell.

SECT. 16. THE STANDING JUSTICE OF THE POLICE COURT OF LOWELL shall be paid by the rate of one hundred dollars per annum, for receiving complaints, issuing warrants, and trying cases under the forty-eighth chapter of the Public Statutes, or any subsequent Act or Ordinance concerning truant children and absentees from school.

SUPERINTENDENTS AND INSPECTORS.

Superintendent of Streets.

SECT. 17. The salary of the SUPERINTENDENT OF STREETS shall be at the rate of eighteen hundred dollars per annum. The city shall furnish a horse and conveyance for his use.

Superintendent of Public Buildings.

SECT. 18. The salary of the SUPERINTENDENT OF PUBLIC BUILDINGS shall be at the rate of fifteen hundred dollars per annum. The city shall furnish a horse and conveyance for the use of himself and the men under his charge.

Superintendent of the Water Works.

SECT. 19. The salary of the SUPERINTENDENT OF THE WATER WORKS shall be at the rate of sixteen hundred dollars per annum; and the city shall furnish a horse and carriage for his use.

Superintendent of City Scales.

SECT. 20. The salary of the SUPERINTENDENT OF CITY SCALES shall be at the rate of two hundred dollars per annum; and he shall pay into the city treasury all moneys received for fees.

The salary of any additional Weigher of Hay and other articles shall be at such rate as the Mayor and Aldermen may, from time to time, determine; *provided*, that the same shall not exceed the amount of fees received.

Fish Warden.

SECT. 21. The salary of the FISH WARDEN shall be at the rate of forty dollars per annum;

Pound-keeper

and the salary of POUND-KEEPER shall be at the rate of twenty-five dollars per annum.

Sealer of Weights and Measures.

SECT. 22. The salary of the SEALER OF WEIGHTS AND MEASURES shall be at the rate of three hundred dollars per annum, and all fees received by him shall be paid into the city treasury monthly; and he shall, at the same time, report to the Auditor of Accounts the amount of such payment.

Secretary of the Board of Overseers of the Poor.

SECT. 23. The salary of the SECRETARY OF THE BOARD OF OVERSEERS OF THE POOR shall be at the rate of thirteen hundred dollars per annum.

Board of Health.

SECT. 24. The salary of the appointed members of the BOARD OF HEALTH shall be at the rate of six hundred dollars per annum each.

REGISTRARS OF VOTERS.

Registrars of Voters.

SECT. 25. The salary of the appointed REGISTRARS OF VOTERS shall be at the rate of four hundred dollars per annum each; and the Chairman of said Board of Registrars shall receive fifty dollars additional, and the City Clerk, as a member *ex-officio*, shall receive a compensation of two hundred dollars per annum. They shall receive their pay in equal amounts, in the months of October, November, and December.

ASSESSORS' DEPARTMENT.

Assessors of Taxes.

SECT. 26. The salary of the ASSESSORS OF TAXES shall be at the rate of twenty-two hundred and fifty dollars per annum each; and the salary of the ASSISTANT ASSESSORS shall at the rate of one thousand dollars per annum each. They shall devote their whole time to the service of the city, and shall make out and distribute the tax bills.

Assistant Assessors.

FIRE DEPARTMENT.

SECT. 27. The salaries of the several members of the Fire Department, for the year beginning May first, one thousand eight hundred and ninety-one, shall be as herein mentioned, to be paid semi-annually, unless otherwise ordered.

Chief Engineer.

The salary of the CHIEF ENGINEER shall be at the rate of fifteen hundred dollars per annum, payable monthly, which shall be in full payment

for all services which may be required of him by the City Council; and he shall devote his whole time to the duties of his office.

First Assistant Engineer.

The salary of the FIRST ASSISTANT ENGINEER shall be at the rate of three hundred dollars; and of the other Assistant Engineers at the rate of two hundred and seventy-five each per annum.

Secretary of the Board of Engineers.

The SECRETARY OF THE BOARD OF ENGINEERS, who shall be a member of the Board, shall receive twenty-five dollars additional, which shall be in full payment for all the services which may be required of him by the Mayor and Aldermen, the Chief Engineer, and the Board of Engineers.

Call Foremen.

The CALL FOREMEN of the respective Hose, Hook and Ladder, and Steam Fire Engine Companies shall be paid at the rate of two hundred and twenty-five dollars each per annum, excepting the foremen of Wilson and Lamson Companies.

Drivers.

DRIVERS of Steamers, Hook and Ladder, Horse Hose Carriages, and Protective Wagon, who shall perform all the duties of stewards, and all other permanent men, shall be paid two dollars and seventy-five cents per day each; payable weekly.

Engineers of Steam Fire Engines.

ENGINEERS OF STEAM FIRE ENGINES shall be paid at the rate of two hundred and twenty-five dollars per annum.

Assistant Engineers of Steam Fire Engines.

ASSISTANT ENGINEERS OF STEAM FIRE ENGINES shall be paid at the rate of one hundred and seventy-five dollars per annum each.

All other MEMBERS of Steam Fire Engine, Hose, and Hook and Ladder Companies shall be paid at the rate of two hundred dollars per annum each. Members.

SECT. 28. Whenever any person in the employ of the city shall demand payment of his salary, or any part thereof, it shall be the duty of the Auditor and City Treasurer to deduct therefrom any and all sums of money due from such officer to the city.